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Upcoming events

77th General Meeting of the European Council of Civil Engineers







The 77th ECCE General Meeting took place from October 5th to 7th, 2023, at the Artis Centrum Hotel in the beautiful city of Vilnius, hosted by the Lithuanian Association of Civil Engineers (LSIS). The meeting aimed to foster collaboration, exchange knowledge, and address the challenges and opportunities facing our profession. It brought together representatives from professional organizations of civil engineers across numerous European countries and the international community.



ECCE President Andreas Brandner and LSIS President Zymantas Rudzionis

In his opening speech, at the 77th ECCE General Meeting, the President of the European Council of Civil Engineers Dipl.-Ing. Andreas Brandner, extended a warm welcome and expressed gratitude to the LSIS for hosting this meeting. He highlighted that following the adoption of the ECCE Strategic Plan in the 76th ECCE General Meeting, we are now in the process of working through the individual points and dealing with them, setting priorities in accordance with the guidelines. One of the major topics of this ECCE General Meeting is financial management and membership fees. He emphasized the need for timely payment of membership fees to sustain the organization's activities and introduced the proposed adjustments to the membership fees to maintain a balanced budget. He reassured ECCE members that the ECCE Executive Board is committed to meticulously assessing and reevaluating the methodology behind fee calculations and distribution, with the aim of aligning ECCE's financial planning with the prevailing economic conditions. He also appealed to the commitment of all members to support this plan.

With regard to ECCE's collaboration with the European Commission and the European Council of Engineers Chambers (ECEC), he mentioned that ECCE has been actively engaged in the discussion with the Commission about a Common Training Framework (CTF) for civil

engineers. A survey conducted during the summer among members of both organizations provided valuable insights and findings that will be used to shape discussions and reach a workable compromise that benefits civil engineers. The outcomes of these discussions will be reported in due course.

President Brandner also stressed the importance of lifelong learning for civil engineers. In an era of rapid and dramatic changes and developments, he emphasized that it is imperative to continue learning beyond obtaining a license. With the growing emphasis on sustainability, highly qualified civil engineers are uniquely positioned to contribute to the realization of sustainability goals in the planning, construction, and utilization processes. This presents a significant opportunity for engineers to become competent, independent partners for clients in achieving these goals. To further explore this topic, a forum was scheduled at the conclusion of the general assembly, featuring three captivating lectures and a subsequent panel discussion.

President Brandner also referred to the new project that ECCE is working on regarding the update of the book on the civil engineering profession in Europe, pledging the members' active collaboration and support in this endeavor.

Last but not least, he highlighted the efforts to expand ECCE's membership, with ongoing discussions with Italy, Spain, Germany, and other European countries reflecting ECCE's commitment to fostering collaboration and knowledge-sharing among European civil engineers.

The President of the Lithuanian Association of Civil Engineers (LSIS), Prof. Zymantas Rudzionis, welcomed colleagues from across Europe to the 77th ECCE General Meeting in Vilnius, highlighting the special significance of 2023 as Vilnius celebrates its 700th anniversary. In his speech, the LSIS President provided insight into the history of LSIS, which was founded over 30 years ago, and its mission to represent civil engineers and disseminate knowledge about the construction sector. With over 800 members, LSIS continues to grow, focusing on addressing key challenges in the field. One of the core challenges mentioned was the pursuit of self-government for civil engineers, enhancing professionalism, particularly in the digital construction field, and the adoption of sustainable construction principles. The President emphasized the importance of environmentally friendly engineering methods in achieving these goals.

The President also highlighted the ECCE Forum of Civil Engineers on Sustainability in Construction, a crucial component of the ECCE General Meeting, which aims to foster collaboration, exchange knowledge, and address the challenges and opportunities facing the civil engineering profession. He expressed his gratitude to key supporters and invited all participants to actively engage in the Forum on Sustainability in Construction.



ECCE President Andreas Brandner, ECCE Gen. Secretary Maria Karanasiou, Ivan Nazarenko (Ukraine's Delegate) and LSIS President Zymantas Rudzionis

The 77th ECCE General Meeting witnessed a significant address by Mr. Ivan Nazarenko, one of the founders of the Ukrainian Council of Civil Engineers, who conveyed congratulations from President Petro Shilyuk and offered insight into the current state of Ukraine, acknowledging the challenging circumstances the nation faces due to large-scale Russian aggression. He mentioned the substantial losses in real estate and infrastructure amounting to approximately \$150 billion, with residential housing accounting for a significant portion. He expressed gratitude for the international support received during this difficult time. Mr. Nazarenko highlighted the involvement of Ukrainian engineers in the development of a national program for post-war reconstruction and the need to prepare modern engineering personnel, which faces a shortage. He mentioned their efforts to collaborate with educators, scientists, and construction company leaders and sought assistance from ECCE and its member organizations. He also expressed thanks to ECCE's President Andreas Brander and Secretary General Maria Karanasiou for their support and declared readiness for further cooperation with European colleagues.

Key highlights of the 77th ECCE General Meeting included the presentation of the <u>ECCE Activity Report</u> over the past four months, <u>news from the construction industry</u>, and the presentation and discussion of ECCE financial management by ECCE Vice President/ Treasurer Helena Endriksone.

The ECCE Vice President/President Elect Platonas Stylianou announced the new <u>ECCE initiative to update the book "Civil Engineering Profession in Europe."</u> Platonas Stylianou heads the Working Group responsible for leading this project, alongside fellow members Andreas Brandner, Jeanette Muñoz Abela, and Maria Karanasiou. This initiative involves the review and update of a book on the European civil engineering profession (last edition in 2005) and the creation of an e-book. The project includes reorganizing existing chapters, introducing new ones, and collecting data from European countries. Guidelines for data collection and online questionnaires are being developed, and the involvement of ECCE members who have volunteered is anticipated. The project aims to establish an online database for information storage and comparison between countries, as well as create a digital and editable book. A timeline outlines key milestones, with completion expected in the second quarter of 2025. This project will provide an up-to-date and accessible resource for the civil engineering profession in Europe.



ECCE Vice President/ President Elect Platonas Stylianou



LSIS Executive Director Robertas Encius

The 77th ECCE General Meeting addressed various topics related to sustainable construction practices. LSIS Executive Director, Robertas Encius, presented the <u>results of a survey on sustainability in construction</u> that was launched prior to the meeting among the members of ECCE. The importance of aligning industry goals with sustainable development goals (SDGs) and implementing transformative approaches towards sustainability was highlighted. The challenges and considerations related to BIM implementation, the circular economy, and national-level programs for sustainability were discussed. The importance of waste management, renewable energy sources, Building Information Modeling (BIM), energy efficiency, and training for engineers was emphasized. The limitations of existing sustainability standards, the need for holistic sustainability considerations, and the

importance of resilience in building structures were also discussed. The participants stressed the need for broader access to sustainability discussions, systems thinking, and education in engineering knowledge.



77th ECCE General Meeting participants

As part of the hospitality program organized by the Lithuanian Association of Civil Engineers, attendees enjoyed traditional Lithuanian gifts that promoted sustainability, experienced traditional Lithuanian cuisine, and participated in dinners and cultural visits.

The comprehensive collection of materials, presentations, and photographs from the 77th ECCE General Meeting are readily accessible for consultation on the official ECCE website. You may explore the assortment by visiting the following <u>link on the ECCE website</u>.

The European Council of Civil Engineers extends its heartfelt appreciation to the Lithuanian Association of Civil Engineers for successfully organizing the 77th ECCE General Meeting and the ECCE Forum of Civil Engineers on Sustainability in Construction. The ECCE is immensely grateful for their impeccable organizational skills and exceptional hospitality, which contributed to the resounding success of these events.

ECCE Forum of Civil Engineers on Sustainability in Construction

The 77th ECCE General Meeting reached its conclusion with the ECCE Forum of Civil Engineers on Sustainability in Construction, an event that united experts, professionals, and enthusiasts from the civil engineering community across Europe to deliberate on and shape the future of sustainable construction. The inaugural address of the ECCE Forum was delivered by Dipl.-Ing. Andreas Brandner, ECCE President, alongside Dr. Daiva Veličkaitė-Matuzevičė, Vice-Minister of Environment of Lithuania, and Dainius Čergelis, Head of the Construction and Housing Policy Group at the Ministry of Environment, who set the stage for the ensuing presentations and discussions.

The three keynote speakers at the forum were as follows:



Opening of the Forum by Dr. Daiva Veličkaitė-Matuzevičė, Vice-Minister of B Environment of Lithuania

- Tomas Blažiūnas, Head of the Innovation Department at UAB *Environment of Lithuania* INHUS Engineering, presented on <u>"BIM as a Tool for Address-ing Sustainability Challenges."</u>
- Paulius Bulota, Director of UAB Peikko Lietuva, discussed <u>"The Reuse of Precast Concrete Structures A</u> <u>Practical Case Study."</u>
- Paulius Milčius, Business Development Manager of UAB "VMGcorp," shared insights on <u>"Engineered Timber</u> <u>Inspirations for GreenConTech-Based Urban Reshaping."</u>

Subsequent to these enlightening presentations, a spirited panel discussion ensued, moderated by Dr. Jeanette Muñoz Abela, an architect, civil engineer, and ECCE Executive Board Member, along with Robertas Encius, LSIS Executive Director. The panel comprised a distinguished lineup of thought leaders, including Dipl.-Ing. Andreas Brandner, ECCE President; Dr. Daiva Veličkaitė-Matuzevičė, Vice-Minister of Environment of Lithuania; Dainius Čergelis, Head of the Construction and Housing Policy Group of the Ministry of Environment; Tomas Blažiūnas, Head of Innovation Department at UAB INHUS Engineering; Paulius Bulota, Director of UAB Peikko Lietuva;

Paulius Milčius, Business Development Manager of UAB "VMGcorp"; and Dalius Gedvilas, President of the Lithuanian Construction Association.



ECCE Forum of Civil Engineers on Sustainability in Construction

The ECCE Forum on Sustainability in Construction provided a platform for experts to underscore the pivotal role of sustainability in the construction industry. During the event, speakers delved into various crucial aspects, including the utilization of renewable materials in public structures, enhanced data accessibility for quality assessments in construction, the adoption of life cycle assessment methodologies, and the utilization of digital tools for sustainability analysis. Moreover, the forum underscored the significance of reducing carbon emissions, accurate modeling, and data analysis in construction processes, emphasizing the need for accessible and reliable data in decision-making. Discussions

also revolved around concepts like reusable and disassemblable building structures, the feasibility of construction in challenging winter conditions, and the necessity of macro-level sustainable solutions.

Participants emphasized the importance of education, regulatory measures, and skill development in promoting sustainable practices while addressing challenges such as greenwashing, standardization, and the reuse of connections in construction. Altogether, the resounding message was the imperative to prioritize sustainability and seamlessly integrate it throughout the entire lifecycle of materials in order to create efficient and eco-friendly buildings, all while stressing the value of collaboration and the removal of regulatory obstacles.

View the ECCE Forum for Civil Engineers on Sustainable Construction on <u>ECCE's YouTube channel</u>.



ECCE Forum of Civil Engineers on Sustainability in Construction panel discussion

New ECCE project | Updating the book "Civil Engineering Profession in Europe"



The European Council of Civil Engineers (ECCE) published the book "Civil Engineering Profession in Europe" for the first time in the early 1990s. A second edition appeared in 1998, and a third one in 2005 which can be accessed through the link <u>here</u>. The aim of the book "Civil Engineering Profession in Europe" was to present the civil engineering profession in Europe at that time through the eyes of the professionals themselves and to provide valuable insights into the state of the profession across ECCE's member states. In doing so, ECCE did not look at construction figures, nor major projects, but at the education, training and professional practice of civil engineers ranging from the northern tip of Finland across the European continent to the northern shores of the Mediterranean Sea.

Recently, the Executive Board of ECCE decided to undertake an important and ambitious project to further enrich the Civil Engineering Profession in Europe by updating and expanding this essential resource to reflect the current status of the civil engineering profession in Europe.

The scope of this project holds great potential for a better understanding of our profession and its status in each country. The key objectives of this project are as follows:

- Record data from each country on a common platform: We aim to gather comprehensive and up-to-date
 data from each member country to understand the current state of civil engineering. By having this data on a
 common platform, we can conduct meaningful analysis, identify trends, and foster cooperation. This will aid in
 creating an ecosystem of infrastructure and support as per the ECCE Strategic Plan.
- Constant learning, exchange, and enrichment of knowledge: This project encourages continuous learning
 and the sharing of experiences among our members. The data collected will be used to create knowledgesharing platforms and facilitate the exchange of best practices. This is in line with ECCE Strategic Plan
 Theme of Education, Research and Knowledge Transfer.
- Record the various activities of countries for the benefit of society and the profession: By documenting
 the diverse activities carried out by our member countries, we can showcase the positive impact of civil engi-

neering on society and inspire further growth in the profession. This would promote the engagement of the professional community as per the ECCE Strategic Plan.

- Create communication channels: Establishing effective communication channels will strengthen collaboration among member countries, foster partnerships, and encourage joint projects that address common challenges. This enables the development of both internal and external communication and promotes collaborative skills.
- Share data and raise awareness: The data collected will serve as a valuable resource for raising awareness
 about different aspects of the civil engineering profession, including its contribution to sustainable development, infrastructure resilience, and environmental protection. This forms part of ECCE's effort in promoting
 public outreach.
- Protect the profession of civil engineers: By having a comprehensive understanding of the profession in
 each country, we can better advocate for the protection of our profession's interests and advocate for its
 recognition and importance on both national and European levels. This is in line with ECCE Strategic Plan
 Theme of Societal Factors and Impact.

To coordinate this extensive project, a dedicated working group has been established within the ECCE Executive Board formed by ECCE Vice President/ President Elect Platonas Stylianou, who is the coordinator of the group, ExBo member Jeanette Muñoz Abela, ECCE General Secretary Maria Karanasiou, and the President Andreas Brandner. Additionally, the active cooperation with the ECCE Honorary President Yrjo Matikainen and the former ECCE Vice President Carsten Ahrens who published the 2005 edition of the book and are now acting as consultants to the Working Group for the revision process will provide valuable insight and expertise in this endeavour. An open call to other National Delegate members of ECCE who may be interested in working on the project more actively has been addressed by the ECCE President.

The inaugural phase of the project commenced in November, initiating surveys distributed among ECCE members to address the initial four chapters of the upcoming edition of the book:

- 1. Profile of Professional Organizations
- 2. The Education System
- 3. Registration, Recognition, and Protection of the Professional Title
- 4. Legal Background to the Profession and Code of Conduct/Ethics

Furthermore, we have extended invitations to non-ECCE-member civil engineering organizations in Europe, encouraging their participation in the project. We value their insights and contributions, which will contribute to the development of a comprehensive and current resource for our profession.

Throughout 2024, our goal is to gather information on all the chapters slated for coverage. The accumulated data will then be accessible through a comprehensive database and an informative e-book. Acknowledging the pivotal role of each member country's participation, we earnestly seek the collaboration and engagement of all our members and European civil engineering organizations. Your support and active involvement are crucial to the success of this initiative.

78th ECCE General Meeting announcement — Mark your calendars!



The 78th ECCE General Meeting is scheduled to take place in Riga, Latvia, from May 22nd to 24th, 2024. This event will be hosted by the Latvian Association of Civil Engineers which celebrates its 100th Anniversary. Further details will be shared on the ECCE website in the near future. Stay connected for updates!

The European Council of Civil Engineers mourns the passing of Professor Alois Materna

A profound Loss for ECCE and the Civil Engineering Community



Prof. Ing. Alois Materna 22/5/1945 - 28/11/2023 © ČKAIT

The European Council of Civil Engineers is deeply saddened by the passing of Professor Ing. Alois Materna, CSc., MBA, an esteemed figure in the field of structural mechanics and plasticity. His departure leaves an indelible void in the ECCE and the broader civil engineering community.

Prof. Materna, born on May 22, 1945, was a distinguished expert, an award-winning educator, and the Dean Emeritus of the Faculty of Civil Engineering at Brno University of Technology. His contributions extended beyond academia, as he served as the long-standing First Vice-Chairman of the Czech Chamber of Chartered Engineers and Technicians in Construction (ČKAIT). In this role, he represented the chamber in the Scientific Council and the Council for Internal Evaluation of Brno University of Technology.

His academic journey encompassed achievements such as earning his CSc. degree in the mechanics of rigid and flexible bodies and environments from the Brno University of Technology and an MBA from Nottingham Trent University (UK). In 2010, he was appointed Professor of Applied Mechanics at the Technical University of Ostrava, focusing on structural mechanics, elasticity and plasticity theory, numerical methods, the finite element method, information systems and technologies, sustainable development, and wooden structures.

Professor Materna's impact reached administrative heights as he served as Dean of the Faculty of Civil Engineering at both Brno University of Technology and the Technical University of Ostrava. Until his last moments, he passionately lectured on the statics of building structures and, as Vice Dean for External Relations, nurtured collaboration with the building practice.

His dedication extended to the development of higher education and the lifelong education of authorized individuals within the CKAIT. Prof. Materna chaired the editorial board of the journal Energy Self-Sufficient Buildings for many years, reflecting his commitment to advancing knowledge in the field.

For nearly a decade, Professor Materna represented the Czech Chamber of Chartered Engineers and Technicians in Construction (ČKAIT) in ECCE, offering valuable insights and contributions. His absence will be profoundly felt, and we acknowledge the significant impact he had on our community.

Beyond his professional accomplishments, Prof. Materna was not just a colleague but a cherished friend. His warm demeanor and genuine camaraderie enriched our collaborative efforts, and he will be deeply missed by all who had the privilege of working alongside him.

On behalf of the European Council of Civil Engineers, we extend our heartfelt condolences to Prof. Materna's wife Maria, his family, friends, and colleagues. Our thoughts and prayers are with them during this difficult time. We recognize the magnitude of this loss, and we share in the grief that is felt across the engineering community.

The American Society of Civil Engineers and the European Council of Civil Engineers renew their Agreement of Cooperation

On 7th September 2023, in Athens, Greece, ASCE and ECCE renewed and formally signed an Agreement of Cooperation. This momentous occasion took place during a meeting attended by delegations representing the American Society of Civil Engineers, the European Council of Civil Engineers, the Technical Chamber of Greece, and the Association of Civil Engineers of Greece.

The ASCE and ECCE have united under this agreement to strengthen their commitment to advancing the engineering profession for the betterment of society.



ECCE President Andreas Brandner and ASCE President Maria Lehman signing the Agreement of Cooperation

This collaboration promises an array of exciting activities, including but not limited to:

- Information exchange about the engineering profession.
- Joint events to foster collaboration.
- Student, lecturer, and guest exchanges.
- Sharing insights on scientific and technical events.
- Offering professional advice on international, technical, and scientific matters.

This partnership between ECCE and ASCE signifies our shared commitment to advancing civil engineering worldwide. Together, we aim to enhance our profession's impact on society and promote knowledge exchange.



ECCE participated in the ASCE 2023 Convention



ECCE President Andreas Brandner actively participated in the ASCE 2023 Convention held in Chicago, USA, from October 18th to 21st, 2023. Under the theme "Be Future Ready," the convention provided a comprehensive exploration of crucial topics in the civil engineering profession. Its focus encompassed the current state of the industry, integrated systems, system failures and recovery, strate-

gic issues/public policy, significant projects, and history & heritage.

The convention program was meticulously crafted to engage a diverse audience within the engineering profession, featuring sessions that delved into a wide spectrum of issues and perspectives. To access more information, interested individuals are encouraged to visit the official ASCE 2023 Convention website.

two organizations.



President Brandner also participated in a meeting with President 2023 Lehman, President-elect (2024) Geldert-Murphey, President-elect-elect (2025) Pena -Mora, Past President Truax, R10 Director Lander, Executive Director Smith, and Global Programs McLarty. The primary focus of the meeting was to discuss potential collaborative activities between ECCE and ASCE, building upon the Agreement of Cooperation signed in Athens in September 2023. The gathering aimed to



Left to right: ASCE 2023 President Maria Lehman, ECCE President Andreas Brandner, ASCE 2024 President Marsia Geldert-Murphey

explore engagement opportunities and strengthen collaboration between the

ECCE participated in the 18th WCCE General Assembly and the 30th **IEK International Convention**



16th NOVEMBER 2023 MOMBASA, KENYA



ECCE President Andreas Brandner actively participated in the 18th General Assembly of the World Council of Civil Engineers (WCCE) and the 30th International Convention of the Institution of Engineers of Kenya (IEK), held from November 14th to 17th, 2023, in Mombasa, Kenva,

In parallel, ECCE Vice President/Treasurer Helena Endriksone virtually attended the 18th WCCE General Assembly, reinforcing the commitment of ECCE as an international member of WCCE. The collaboration between these two organizations remains robust, with a shared dedication to advancing civil engineering both in Europe and globally.

The 18th WCCE General Assembly provided a platform for WCCE members to engage in meaningful discussions and reflections on the future of the profession. It offered an opportunity to assess WCCE's progress over the past year and explore avenues for strengthened

collaboration with regional and global partners such as ECCE, CICPC, UPADI, FAEO, WFEO, UNESCO, and UN Water. Additionally, discussions aimed at initiating partnerships with organizations like UNIDO, UN-Habitat, UNEP, and FAO, deeply involved in achieving the UN 2030 Agenda's Sustainable Development Goals, were pursued.

The 30th IEK International Convention, themed "Engineering a New World," delved into seven subthemes:

- Housing, Infrastructure, Transport, and Finance for Engineering
- Water, Irrigation, Environment, and Climate Change
- Energy, Electrification, and Information and Communication Technologies
- Manufacturing, Machinery, Built Environment Services, and Refrigeration
- Engineering for Food Security and Agroindustry
- Engineering Devolution, International Accords, and Trade in Services
- Emerging Technologies, Engineering Leadership, Education, Training, Research, and Practice

Furthermore, the convention hosted the 6th Women Engineers Summit and the 2nd Future Leaders' Summit on November 14th, 2023, during its inaugural day.

For additional details on the 30th IEK Convention, interested parties can access more information here.





ECCE participated in the EAMC Executive Board Meeting and **General Assembly**



The Engineering Association of Mediterranean Countries (EAMC) convened its Executive Board Meeting and General Assembly September 25, 2023, in Rome, Italy, at the premises of the Consiglio Nazionale degli Ingegneri (CNI).

Aris Chatzidakis, the Immediate Past President of ECCE, who is a member of the EAMC ExBo and ECCE President Andreas Brandner participated in the events on behalf of ECCE.

During the meetings, the primary focus revolved around two key subjects: the financial situation and the potential modification of the EAMC statutes.

A proposal for new statutes was presented originating from Italy/Portugal. It was noted that this proposal is subject to revision. Additionally, a second proposal from the Federation of Arab Countries was submitted in written paper format on the day of General Assembly. It was proposed and subsequently agreed upon that the two proposals should be merged into a unified version. This amalgamated proposal will be disseminated three months prior to the next General Assembly for further consideration.

Furthermore, it was decided that in the coming year, two General Assemblies will be scheduled. The first will be an extraordinary meeting in an Arab Country, with the primary agenda of voting on the new statutes. The second General Assembly will take place during the autumn ECCE General Meeting in Athens, in October 2024.



ECCE participated in the International Symposium on "Sustainability and Infrastructure"



TECHNICAL The European Council of Civil Engineers participated in the International Symposium on CHAMBER OF GREECE "Sustainability and Infrastructure" that was held on 6th September, 2023, in Athens, Greece. The Symposium was organized by the Technical Chamber of Greece, in collaboration with the Association of Civil Engineers of Greece and the Greek Section of the American Society of Civil Engineers (ASCE Hellenic Section, Greece).

This event brought together an impressive line-up of experts from both ASCE and the Greek community, including representatives from the political, academic, and business sectors. A welcome address was delivered by ECCE President Andreas Brandner, and joining the symposium were Platonas Stylianou, ECCE Vice President/President Elect, along with Maria Karanasiou, ECCE General Secretary.

You can watch the event here.



ECCE participated in the Construction 2050 Alliance meeting



On 29th September 2023, the Construction 2050 Alliance held an in-person meeting in Brussels gathering together key play ers from the construction industry for a brainstorming session aiming to reenergize the visibility of the sector and to set the stage for the near future leading up to the 2024 EU elections.

ECCE President Andreas Brandner participated in the meeting representing ECCE.

"Mother Europe (Old Continent)" faced with aging and unmaintained infrastructure



By Aris Chatzidakis Immediate Past President ECCE Deputy President of the Greek Earthquake Planning and Protection Organization (E.P.P.O.) <u>chatzidakisaris@gmail.com</u>

The problems stemming from the aging of Europe's infrastructure and buildings are becoming more and more obvious and critical. Recent bridge collapses have sent us a resounding message. We realize that we are sitting on a bomb of security issues, which can explode at any moment.

THE PROBLEM OF AGING AND LACK OF MAINTENANCE OF EUROPE'S INFRASTRUCTURE

The ten-year-old austerity policy imposed across Europe was generally accompanied by a generalized cut back on public investment, mainly in the maintenance and upgrading of existing infrastructure.

This economic juncture unfortunately coincides with the completion of 40-60 years since the creation of Europe's basic infrastructure in the 60-80s. This means that basic infrastructures, mainly transport and hydraulic, are beginning to exhaust their technically expected lifetime.

So the phenomena of failures and accidents that are starting to happen more and more often are technically expected and obviously a broad program of maintenance and upgrading of our infrastructure is required. Bridges are certainly the most critical element of the road network.

It is not just the issue of aging that needs to be addressed. There is also a serious development in our scientific knowledge that must be incorporated into them, and, above all, the multiplication of the traffic loads and speeds at which they were calculated in relation to today's. In countries with seismicity like Greece, the relevant knowledge and safety levels of today's constructions have nothing to do with those at the time of the design and construction of these infrastructures.

Certainly, the problem concerns all developed countries that created their infrastructure in the 20th century.

The American Society of Civil Engineers in its 2021 bulletin on the state of the infrastructure of the United States that it publishes periodically reports on bridges.



EXECUTIVE SUMMARY

There are more than 617,000 bridges across the United States. Currently, 42% of all bridges are at least 50 years old, and 46,154, or 7.5% of the nation's bridges, are considered structurally deficient, meaning they are in "poor" condition. Unfortunately, 178 million¹ trips are taken across these structurally deficient bridges every day. In recent years, though, as the average age of America's bridges increases to 44 years, the number of structurally deficient bridges has continued to decline; however, the rate of improvements has slowed. A recent estimate for the nation's backlog of bridge repair needs is \$125 billion. Estimates show that we need to increase spending on bridge rehabilitation from \$14.4 billion annually to \$22.7 billion annually, or by 58%, if we are to improve the condition. At the current rate of investment, it will take until 2071 to make all of the repairs that are currently necessary, and the additional deterioration over the next 50 years will become overwhelming. The nation needs a systematic program for bridge preservation like that embraced by many states, whereby existing deterioration is prioritized and the focus is on preventive maintenance.

A broad infrastructure maintenance program has been in place for years in the US, and the percentage of unsafe bridges has been steadily decreasing. President Biden recently announced a massive new infrastructure investment package. However, the needs are so great that it will take decades to fill them as shown by the ASCE text.

ASCE's recommendations to the state, which also apply to us, are:

- Increase funding for bridge rehabilitation at all levels of the Administration and the road network.
- Priority in the maintenance of bridges that are in moderate condition because this will prevent further deterioration and maintenance will cost much less.
- Investigating the establishment of new taxes for the maintenance of the road network and the adoption
 of management techniques that take into account the entire lifetime of the infrastructure. (LCCA).
- Priority on critical bridges, i.e. those with the greatest traffic load.
- Continue research on innovative monitoring practices, assessment and conservation materials and techniques.

Europe obviously faces similar problems.

In France, the Minister of Transport estimates that the third of the country's 12,000 bridges need maintenance. In 7% of the cases, the situation is considered dangerous for collapse so that they need immediate maintenance, and it is recommended to limit the loads in them.

In Germany, while only 12.5% of bridges are considered to be in poor condition, also only 12.5% are considered to meet modern requirements. It is clear enough that the rest of them have not been designed for today's loads.

In Italy estimates that around 300 bridges are at risk of failure and there is a sense in the technical world that the life limit of basic infrastructure is being exhausted. Since 2013 we had 9 bridge collapses with luckily only 2 victims.

Although bridge failures were not unknown, the collapse of the bridge in Genoa on 14/8/2018, with 43 victims, brought the problem to the fore in the most tragic way.



Economist Thomas Friske looks for the causes of the tragedy in Genoa, where dozens of people lost their lives after the collapse of the viaduct, in his article in "Spiegel Online".

"There have been a few times such dramatic savings to refurbish public works as recently in the Eurozone – and nowhere as much as in Italy. And this should be included in the list of possible causes of the tragedy in Genoa" writes the economist.

In the same sense, the railway accident in Tempi can be traced back to the imposed disintegration and degradation of the HELLENIC RAILWAYS ORGANI-ZATION.

Already in the early 2000s the governments of all the countries that later suffered the crisis were spending 4 to 5% of their GDP on investments in the future – whether in Greece, Ireland, Spain or Portugal. Even in Italy the rate was 3% at the time.

The rift came when, after 2008 and in the middle of a financial panic, cuts were suddenly made everywhere – on the one hand to save the banks with money and on the other to balance tax deficits due to the crisis. Because without blood and tears, that's what the doctrine said, the money markets will no longer give money.

In 2004, the European research program titled COST 345 Procedures Required for the Assessment of Highway Structures was prepared.

According to this very valuable research, which I personally would consider a reference text, the picture of the infrastructures in summary is as follows:

With figures from 2004 in Europe of 27 there were 1 million bridges, at least 50,000 km of retaining walls and about 4000 two-lane tunnels. According to the most modest calculations of the time, the cost of replacing these infrastructures was around 600 billion Euros. Today's will be in the order of 1 trillion Euros.

There are several gaps in the uniform recording of infrastructure and a clear deterioration of the image and state of maintenance as the level of management moves from national to regional and local level.

The recommendations of the study are summarized below.

- Common rules of good practice should be established at European level for assessing the condition of highways.
- A reliable, common at European level, inspection, assessment and maintenance system is necessary to ensure the safety and functionality of the road network with modern management tools and full use of modern monitoring and assessment techniques.

- Specific loading rules should be established for the existing infrastructures, taking into account the local data, the remaining life time of the infrastructure and the monitoring and control safety measures that will be imposed.
- There is an open field of research both in the development of better methods of non-destructive testing techniques, materials that ensure durability and repair methods that do not interrupt the use of the infrastructure. The people charged with inspecting infrastructure and valuing it should be properly trained and certified.

The above conclusions retain their value intact and the necessity of their adoption.

On September 27, 2018, the European Commission released a discussion text on the State of Infrastructure Maintenance. In this text, despite the differences that exist between the Member States, a total reduction of 38% in maintenance expenditure is recorded between 2006 and 2012. In Italy we had a 45% reduction between 2008-2009.

These infrastructures are of vital importance for the economic, social and regional development of Europe and for this purpose they have been characterized as Trans-European networks. I would like to remind you that the extensive Trans-European Network includes 136,706 km of highways and 138,072 km of railway lines.

According to this research, postponing road infrastructure maintenance for three years can increase its costs by three to six times. A serious problem is that there is no single way of recording infrastructure data, there are multiple levels of planning and management, unevenness in the assessment of their condition. There is a clear deterioration of the maintenance situation when we go from the national to the local level of management. Usually the rail network is in better condition and level of management. OECD data also confirms the need to increase costs for maintenance.

FIEC has sounded the alarm, has organized days in the European Parliament for the maintenance of bridges. The main problem is the lack of sufficient investment in maintenance and the need to secure new forms of longterm financing. It is imperative to ensure the good condition of the Trans-European Network. It is urgent to develop a common European regulation for Infrastructure Inspections and Calibration based on modern scientific knowledge and tools. The ICC Regulation should set specific maintenance obligations on member states.

The meeting of Finance Ministers of the G20 developed countries that took place in July 2021 in Venice issued a declaration on the need for infrastructure maintenance. It calls on the developed countries to see maintenance expenditure not only as a cost to keep them in good condition but as an investment.

"G20 Policy Agenda on Infrastructure Maintenance"...... to look at spending on infrastructure maintenance not just as the cost of keeping assets in good order, but rather as an investment yielding significant benefits both in the short and long-term.

Likewise, the World Bank in its study estimates that the direct economic losses due to failures in the transport network of less developed countries amount to 107 billion dollars a year.

"Well Maintained: Economic Benefits from more Reliable and Resilient Infrastructure" effectively documents how good and timely maintenance boosts prosperity, enabling growth and well-being of people, firms and economic systems as a whole. Investing in higher resiliency of infrastructure is a cost-effective and robust policy choice.

The wider economic dimension of investments in infrastructure maintenance is therefore recognized internationally, but investments in them remain very small. So, there is a problem of European dimensions and a policy of European dimensions is required to deal with it. At the moment there are many developments at the level of research programs for the assessment of the vulnerability of infrastructures.

I refer to the JRC study as an example "RESEARCH AND INNOVATION IN BRIDGE MAINTENANCE, INSPEC-TION AND MONITORING" of 2019 which lists the research that has been done in recent years. From this study is the image below that shows us the means of the near future with which the structural condition of a bridge will be monitored. (Structural Health Monitoring).



Source: JRC/TRIMIS

I would also like to mention researches like SYNER-G and BridgeDatabase which were done exclusively by Greek scientists based on the methodology of drafting vulnerability curves, which give the probability that the structure will exceed a given level of damage at a specific seismic intensity.

Therefore, there are treatments and serious scientific means, even without a single European approval. What is not mentioned is the funding and unfortunately it has not been seriously considered in the priorities of the current and next programming period. Existing Community funding programs and tools simply ignore the problem.

In relation to the recent bridge collapses in the Greek area, I will only mention the case of the historic bridge of Keritis in Platanias area of Chania, to single out the monuments as a special priority.

The impressive three-arched stone bridge with 20-meter spans built in 1908 by the Cretan State collapsed due to undermining of its western pedestals in the second of the floods of February 2019. Until then, it served the traffic of the provincial road from Chania to Alikianos.



The impressive Keritis bridge before and after the collapse

There are a lot of such historic bridges that are still critical elements of our present-day network.

According to relative data, the masonry bridges still in service in Europe are estimated to 200.000 in the railway network and the number raises to almost 300.000 if we include the national road system. It is obvious that they should have the absolute priority for maintenance. Many of them have been declared as monuments and they demand special rules for restoration, and usually long approval periods.

The study of the Keritis bridge is already being drawn up through a programming contract of relevant bodies. It is worth mentioning the initiative of the Regional Unit of Rethymnon to prepare studies for three historical bridges of the Prefecture, of which the historical bridge of Sima still carries all the modern traffic to the Amari District.



The historical bridge of Sima, from a study by our office, with the strengthening operations approved by the Central Council of New Monuments

In our country, a lot of work has been done at the level of theoretical and technical preparation. The Technical Chamber of Greece has organized a number of seminars on these issues. Since 2002, the EARTHQUAKE DESIGN & PROTECTION ORGANIZATION has issued Guidelines for the inspection and seismic assessment of bridges. The MINISTRY OF INFRASTRUCTURE AND TRANSPORTATION also issued in 2009 detailed bridge inspection and assessment manuals. These manuals were updated in 2021. EGNATIA S.A. has an elaborate monitoring and maintenance program and accumulated know-how. The Seismic Protection of Bridges program, prepared by the Technical Universities of the country, concerned the behavior and anti-seismic protection of large bridges. Also, several maintenances have been done on existing bridges and there are studies ready to be implemented.

The EARTHQUAKE DESIGN & PROTECTION ORGANIZATION recently announced the "smart bridges" program with the Technical Chamber of Greece as the contracting authority.

The contract, worth 158 million, concerns the assessment of the structural response of 250 selected mainland road and railway bridges in real time through state-of-the-art systems and Structural Health Monitoring (SHM) methodologies. The purpose of the project is to create a network of "smart" bridges (Smart Bridges Network - SBN) based on the philosophy of an "Internet of Things" (IoT).

According to the Announcement, the subject of the Agreement includes:

a. the primary control of the techniques and the design of the instrumental monitoring as well as the IoT system,

- b. the secondary control of the bridges through appropriate modeling of the techniques at the pre-study level,
- c. the creation of a "Smart Bridges" Digital Repository and Platform,
- d. the supply after installation and commissioning of Real Time Structural Health Monitoring (RTSHM) Systems,
- e. carrying out Non-Destructive Test Loads on the bridges and updating the studies,
- f. the pilot operation of the systems, and
- g. the instrumental structural monitoring of the techniques, productive and guaranteed operation of the systems.

This is a very important step whose results will create a new level of knowledge among Greek engineers, and a leap forward in infrastructure safety management. However, we should note that despite the financial size of the contract, we remain in organization and valuation without work to upgrade the bridges of the program.

Obviously, the scale of the needs requires a much more organized approach and we are still far from even the simple registration of Greek bridges, the number of which is estimated at approximately 17,000. The creation of the country's infrastructure register will contribute to the recording and knowledge of the existing potential so that we do not have to start each time to find out who has the responsibility and ownership of an infrastructure. The clear distribution of responsibilities at the various levels of administration and their coordination through a common methodology and a single electronic database is a condition for the whole project not to be lost in the corridors of bureaucracy.

It is obvious that there will be a need not only to maintain but also to upgrade the functionality and safety of many bridges in the road network. I consider it imperative that the aesthetic upgrading of our bridges, especially those within the urban fabric, should not be ignored in this effort. They are large-scale structures that seal the urban landscape, but also the countryside. The aesthetics of concrete were completely forgotten in our projects. A few years ago, EAMC organized a conference in Rethymnon that raised the issue with Enzo Siviero as rapporteur. As an example of the interesting material presented, I show here the addition of a side footbridge with simultaneous release of the functional width of the bridge.

In addition to the necessary organizational and management effort, the unified administrative structure, the modernization of infrastructure monitoring and valuation methods, it is clear that significant resources will be needed either from Community funds, or from national or other mixed methods of financing.

The issue of seismic upgrading of existing structures (buildings and infrastructure) is a major one for all the countries of the Southern Europe. There is already enough mobility in Italy, Cyprus, Portugal, etc. There are several studies by the JRC, an EU research center, documenting the necessity of upgrading the structural safety of existing structures, not only from the social and human side but also from a purely financial point of view.

Since the existing structural wealth is economically impossible to be replaced, our policies should focus on its sustainable management. Ensuring structural sustainability is a prerequisite for the broader sustainability of the built environment. It is self-evident that there cannot be a sustainable policy for upgrading the existing structural wealth, without ensuring the structural safety of the constructions. So all the actions aimed at the aforementioned information are completely compatible with the basic policies of the Community such as the Green Deal, Renovate Europe and New Bauhaus, and the funds that are necessary should be claimed through these programs as well.

We should work out a policy for the seismic upgrading of the countries' structural wealth alongside the broader sustainable environmental upgrading by approaching the problem of improving the performance of the built environment in a holistic way. This policy requires a collective effort and an interdisciplinary approach.

Aris Chatzidakis, Civil Engineer NTUA, Deputy President of the Greek Earthquake Planning and Protection Organization (E.P.P.O.), Immediate Past President of the European Council of Civil Engineers.

Orban Z. 2004 Assessment, reliability and maintenance of masonry arch railway bridge in Europe.

28th Conference Of the Parties (COP28) recap



The world's biggest climate meeting, the 28th conference of the parties (COP28), recently concluded in Dubai. Negotiators from all over the world met to figure out a plan to deal with the problems caused by climate change. They agreed to help countries that are most affected by climate change and also decided to use less fossil fuels for energy. But, even though they made progress, they didn't do enough to tackle climate change, according to what science says we need. This article talks about the main decisions from COP28 and what went well and not so well.

Help for Those Most Affected

At COP28, countries agreed to support nations that face the worst impacts of climate change. They will help with things like making plans to deal with climate issues, getting better climate information, and helping people move safely if they have to because of climate problems. A group of people from different places will manage a fund for this, starting with money from wealthier countries, totaling over \$650 million.

Money for Climate Action

They also made progress on a money goal (called NCQG) to help developing nations with climate projects. Even though they haven't reached the \$100 billion target yet, they agreed to set a new money goal for after 2025, with more details to come later.

Adapting to Climate Change

COP28 focused on ways to adapt to climate change impacts. The plan includes doubling the money for adaptation projects and setting clear goals for water security, restoring ecosystems, and improving health by 2030. However, there's still work to do on closing the money gap for these projects, and more details will come at COP29.

Emissions and Fossil Fuels

They discussed global emissions and fossil fuels at COP28. The final plan improved a bit, mentioning a peak in global emissions between 2020-2025 and aligning with goals to limit warming. The plan urges countries to take actions to reduce emissions and mentions speeding up efforts to reduce non-CO2 emissions, like methane, by 2030. However, there are concerns about weaker language on coal and mentioning "transitional fuels" like gas. The plan calls for a "transition away" from fossil fuels instead of a quick "phase-out," but it only talks about fossil fuel use in energy systems.

Carbon Markets

Countries also talked about carbon markets, where they can buy and sell credits to reduce emissions. But they couldn't agree on rules for these markets, leaving important questions for COP29.

Other Important Topics

The COP plan highlighted the need for a fair transition and mentioned nature. They emphasized the importance of transitioning fairly in various agreements. Nature-based solutions and a goal to reduce deforestation by 2030 were also part of the plan.

COP29 host

COP28 website.

COP29 will take place in Baku, Azerbaijan, after some objections were dropped. The UAE presidency won't extend, and it won't be in Germany, as initially planned.

The UAE hosts effectively managed the logistics of the largest COP in history. Even though COP28 made some important decisions, some people argue that it's not enough. They managed to agree on helping those most affected by climate change and reducing fossil fuel use, but critics say the progress is too slow. With urgent climate problems and record-high temperatures, they believe we need bigger steps to make a real difference.

For more information on COP28 visit the designated



COP28 Image Credit: COP28 / Mahmoud Khaled

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New European Bauhaus news



New European Bauhaus: kick-starting the transformation

The New European Bauhaus initiative connects the European Green Deal to our daily lives and living spaces. It calls on all Europeans to imagine and build together a sustainable and inclusive future that is beautiful for our eyes, minds, and souls.

The New European Bauhaus is a creative and transdisciplinary movement in the making!

- It is a bridge between the world of science and technology, art and culture.
- It is about leveraging our green and digital challenges to transform our lives for the better.
- It is an invitation to address complex societal problems together through co-creation. By creating bridges
 between different backgrounds, cutting across disciplines and building on participation at all levels, the New
 European Bauhaus inspires a movement to facilitate and steer the transformation of our societies along three
 inseparable values:
 - **Sustainability**, from climate goals, to circularity, zero pollution, and biodiversity
 - **aesthetics**, quality of experience and style, beyond functionality
 - **(inclusion**, from valuing diversity, to securing accessibility and affordability

The New European Bauhaus brings citizens, experts, businesses, and institutions together to reimagine sustainable living in Europe and beyond. In addition to creating a platform for experimentation and connection, the initiative supports positive change also by providing access to EU funding for beautiful, sustainable, and inclusive projects.

Winners of the 2023 New European Bauhaus Prizes



The NEB Prizes celebrate and award inspiring examples of existing projects and ideas from young talents, to make Europe more sustainable, beautiful, and inclusive.

The 2023 edition of the Prizes, the third one overall, received more than 1.400 applications from EU Member States and for the first time, applications for initiatives in the Western Balkans. In the context of the European Year of Skills, the Prizes also included an additional strand focused on education and learning.

After a competitive assessment process, <u>14 projects</u> have not only been selected for their **innovativeness** but also for their **transfer potential** to other EU cities and their capacity in establishing solid local partnerships. The selection was announced during the <u>'New European Bauhaus in Regions and Cities'</u> event on 22nd June 2023, in Brussels.

Supported by a total ERDF budget of EUR 65 million, the selected urban authorities will have the opportunity to experiment creative, innovative and sustainable solutions and to serve as a new generation of New European Bauhaus demonstrators under cohesion policy in the areas of:

- constructing and renovating in a spirit of circularity and carbon neutrality,
- preserving, and transforming cultural heritage,

adapting and transforming buildings for affordable housing solutions,

•

regenerating urban spaces.

Watch the 2023 New European Bauhaus Prizes ceremony



2024 New European Bauhaus Festival

This second edition of the New European Bauhaus Festival with a working title #Planet4All, brings together innovators, creators, scientists, citizens, and collectives from all walks of life to debate and shape a sustainable, inclusive and beautiful future.



From 17 to 21 April 2024, the New European Bauhaus Festival will span across four tracks of activities:

Forum - a platform for engaging discussions and the exchange of ideas surrounding the New European Bauhaus.

Fair - a laboratory and exhibition highlighting projects and prototypes that align with and support the core values of the New European Bauhaus.

Fest - a celebration that unites culture, art, and conviviality, serving as a • moment of collective rejoicing, honouring freedom of expression and embracing radical, innovative, and disruptive ideas and visions.

Satellite events: events and initiatives organised independently in Brussels and beyond, with core activities in line with the New European Bauhaus values.

Interested organisations and individuals can propose their own activities, projects or satellite events to one of the three calls to become a spotlight feature of the Festival. This year, the Festival also welcomes applications from Ukraine and the Western Balkans.

Join the on-going consultation on a potential EU Mission for the New European Bauhaus



Our neighbourhoods define the way we live, work and interact. They influence our wellbeing, provide shelter, and shape our sense of community and belonging

On 19 July 2023, the European Commission proposed a potential new EU Mission for the New European Bauhaus. The goal of this Mission would be to revitalise neighbourhoods across Europe with European Design for sustainability and inclusion. Share your vision for tomorrow's neighbourhoods:

Which objectives for neighbourhood transformation should this proposed EU Mission aim for?

What would these changes look like in practice when implemented? Do you have a concrete example of neighbourhood transformation in mind? Take part in the on-going consultation and help us envision the neighbourhoods of the future, empowering local democracy and providing new opportunities for research and innovation

Deadline December 2023

EP approves a pilot project on innovative financing for the New European Bauhaus initiative

In November 2023 members of the European Parliament approved the pilot project that aims to improve the financing of NEB initiatives in the smallest municipalities and regions that have more difficulties in accessing funds. This pilot project has a budget of 1.45 million euros for its two years of development and will be implemented by the European Commission in partnership with the Committee of the Regions. The project was promoted by MEP Marcos Ros Sempere.

The project entails the implementation of:

a NEB Financing Advisory Centre that will help bring together promoters and local projects in search of funds a support scheme to develop small-scale NEB projects on a local and regional level

Stay tuned for this new project kick off in Q1 2024.

Find detailed information about the call here.

NEB handbook



New European Bauhaus A Handbook

NEBULA project recently published its handbook on the New European Bauhaus, addressed to any person or entity willing to understand the concepts underlying the NEB initiative.

It gives you insights on its origin and what the initiative is about, how to access the community and resources and, most importantly, how you can make your project "NEB by design" and where to get funding to support your NEB project. All of that in an easily digestible format. Download your digital copy of the handbook from the site.

Construction 2050 Alliance News



The "Construction 2050 Alliance" is a partnership established in 2020 made of more than 50 European organisations representing the actors of the built environment working together to advance the needs and priorities of the wider construction and built-environment sector at EU level.

The Construction 2050 Alliance has been established to coordinate common political messages of the construction value chain and raise the political importance of the sector at the European level. The European Council of Civil Engineers is a member of the C2050 Alliance

The Construction 2050 Alliance publishes its call and commitment for the new EU political term



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tions in 2024, the Construction 2050 Alliance has released its Call and commitment for the new European Union political term, reminding how fundamental the construction industry is to the people-economy-climate triangle, and therefore to the competitiveness of the EU.

On 13 December, ahead of the European elec-

The key-role of the construction sector has never been more important in delivering the green, competitive, and inclusive transition of the built environment, but suffers from a severe decline in demand. As we enter an election year, the Construction 2050 Alliance is calling for a crossstakeholder coordinated and integrated EUpolicy approach to improving the climate resilience of our sector's process and output under the new EU-Commission mandate.

As a first step, the Construction 2050 Alliance is committed to establishing, with the support of European policymakers, an annual High-Level Summit for the Built environment, inviting all the relevant policymakers at EU and national level to come together to take stock of the evolution in the construction market.

To continue its indispensable contribution to the achievement of the EU's environmental, social, and economic ambitions, work must begin no later than early 2024, in coordination with the Belgian Presidency of the Council.

The Construction 2050 Alliance is firm in its commitment to ensuring that the fundamental contribution made by the construction industry is recognised and supported by policymakers, with the aim of building tomorrow's Europe today.

To read the full document click here.

News from ECCE Members

Poland

Appeal of the Polish Chamber of Civil Engineers to create a new ministry responsible for the Polish construction sector

Construction, which is one of the largest branches of the Polish economy, was incorporated into the Ministry of Development and Technology in 2021, which resulted in the marginalization of this sector. Additionally, some key regulations are created in other ministries, such as environment, digitalization and infrastructure ones. This has led to legislative and legal chaos in recent years. This was also not helped by the way legislative changes were processed in parliament. We have also warned many times that the current administrative structure makes it difficult, and often even impossible, to conduct appropriate public consultations, which, even if they were conducted, did not provide adequate time to become familiar with and to rate changes that are sometimes crucial for our sector.

As representatives of the 120,000 community driving the Polish construction sector, we appeal for an urgent remedy to this situation by creating a separate Ministry of Construction, which would be a key support for the sector in the face of upcoming challenges. Our sector, as one of the least digitized, faces the need for deep digitization covering many areas of activity and entities, i.e. industry representatives, local government administration and citizens themselves. We also have to face the deepening housing crisis that has recently affected Poles, from which only a stable and strong construction sector can help. Participation in the reconstruction of Ukraine will be a huge challenge, but also an opportunity for Polish companies. We believe that a separate ministry is needed to carry out these tasks.

As the Polish Chamber of Civil Engineers, we would like to remind you that the construction sector is responsible for 1/5 of the Polish GDP and the implementation of tasks strategic from the point of view of the broadly understood security of Poland, i.e. energy, housing, infrastructure, including the construction of roads and bridges and utility facilities.

We declare our full readiness to cooperate and provide support of the entire sector in creating the much needed and long-awaited Ministry of Construction.

The appeal was supported by the rectors of Polish technical universities from the construction community, who also recognized that the creation of a separate Ministry of Construction is necessary for the proper functioning of this sector. They also pointed out the deepening housing crisis, which could not be solved by recent changes to the Construction Law regulations, created in a hurry and without in-depth and reliable consultations with interested communities. At the end of their address, they stated: "Feeling responsible for the issues of broadly understood construction, for which we educate young staff, we appeal for a return to the good practice of entrusting substantive matters in the field of construction to specialists in this field. We trust that the establishment of the Ministry of Construction will contribute to improvement in this important for Poland construction sector."

Debate organized by PIIB on the challenges for the construction sector in the upcoming term of the Polish Parliament



Panelists of the "Debate on the challenges in the construction sector in the upcoming term of the Polish Parliament" Fot. Stach Leszczyński/PAP

The construction industry needs a stable legal system

The Polish construction sector will function better if its legal environment gains the stability that has been missing recently - agreed the participants of the "Debate on the challenges in the construction sector in the upcoming term of the Polish Parliament". The event took place at the PAP Press Center and was organized by the Polish Chamber of Civil Engineers.

Starting the discussion, the president of the Chamber, Mariusz Dobrzeniecki, reminded that the Construction Law - since its entry into force in 1995 - has changed about 300 times, including 44 times in the last eight years. "If we are talking about investing, we need stability, we need to know what will happen not only today, but also in the near future," said the president of the Polish Chamber of Civil Engineers.

The new government brings hope for a new way of conducting dialogue with the sector. "We are unable to analyze the documents submitted to us within a few days. We need more time

for this. We encourage the newly formed government to use our knowledge and experience. We deal with all regulatory issues on a daily basis and we know where the investment process can be improved and where everything is going well. Legislation and creating good law - these are the challenges we face," emphasized Mariusz Dobrzeniecki.

In the opinion of Krystyna Sibińska, Member of the Parliament of the Republic of Poland from the Civic Platform (PO), construction sector has recently been marginalized due to its supervision by several ministries. "We felt a bit homeless when it comes to the construction environment, because one by one Minister Adamczyk's infrastructure and construction competences were taken away and transferred to other ministries. Numerous changes in the law

were supposed to improve investment processes, but this did not happen. Ministers also were changed frequently, which shows that construction sector was neglected," said Krystyna Sibińska.

According to her, it would be a good idea to create a separate ministry of construction. "I am a supporter of dealing with these issues in one ministry. Currently, however, I am not able to say whether there will be a separate ministry of construction, because there is no government yet. However, without a doubt, everything must be in one hand, because then instead of good regulations regarding spatial planning and construction law, we have "dummies" introduced using special laws," said the MP.

The proper functioning of the construction sector also requires cooperation between science and business. "More and more often, companies are asking universities to provide suitably qualified staff from a specific industry. Which means that after completing the first cycle of studies, our construction students already have a job," emphasized Prof. Andrzej Szarata, rector of the Cracow University of Technology.



Mariusz Dobrzeniecki – President of the Polish Chamber of Civil Engineers Fot. Stach Leszczyński/PAP

Hanna Gill-Piqtek, former MP from the Civic Platform, spoke about the reasons for the failure of government housing programs. "The biggest failure was "Mieszkanie plus" (Apartment plus), intended for people with the so-called rent gap, i.e. those who do not have creditworthiness but at the same time earn too much to apply for a municipal apartment. The BGK (Bank of National Economy) pilot project assumed that local governments would start building apartments themselves. Meanwhile, the local governments do not want to take on the running of such investments because they later generate a number of problems, e.g. with lease or rent debts," reported Hanna Gil-Piqtek.

Answering the question of how to solve the problem of 2.5 million people in Poland not having their own apartment, she mentioned the flagship project of her formation, Credit 0%. "It aroused controversy, but its rules can be established in such a way that they are fair and do not burden the state budget. So that two people earning the minimum wage can afford to buy an apartment," said the former MP. She also mentioned the renovation subsidies program, funds in the amount of PLN 10 billion for local governments to renovate old buildings and subsidies for people who cannot afford to rent an apartment.

A sure way to solve the housing crisis may also be to return to the development of housing cooperatives in Poland. "Cooperatives are not for the rich, but for people with fewer financial resources. Loan 2 percent (program of the current government) supports the development of residential construction very well, but to use it one needs to have creditworthiness. Not everyone has it. Therefore, I believe that the basic form that can meet housing needs should be cooperative tenant housing," said Dr. Eng. Mieczysław Grodzki, president of the National Cooperative Council. He also added that a 2% loan could also be introduced. for cooperatives to build apartments, which would facilitate housing investments.

Taking the floor, Prof. Jacek Szer reminded that the construction sector constitutes a significant percentage of Poland's GDP. And despite all sorts of difficulties, the building sector has always somehow managed to cope with them. "It would be good if we could help. When I talk to construction managers, they struggle with uncertainty on a daily basis. It is difficult for them to plan work when they do not know what will happen in terms of loans and construction products. Moreover, inflation makes it difficult to make decisions about further investments," noted Prof. Jacek Szer.

In his opinion, another problem facing the sector is the lack of staff, including all staff - not only those with studies, but also fixers and plasterers. "There are not enough schools to educate these specialists," said the chairman of the Construction Committee of the National Chamber of Commerce.

Jakub Kus, vice-chairman of the "Budowlani" Trade Union, spoke in a similar spirit. "Some changes need to be made to the system so that there is no shortage of employees. But not only in the education system, but in the entire investment system. That is why my union has been calling for the restoration of the Ministry of Construction for a long time. This integrated ministry will have the opportunity not only to dialogue with us as the community, but also financial and implementation possibilities," concluded Vice-President Jakub Kus.

Digitization of the construction process

The General Office of Construction Supervision (GUNB) started activities aimed at digitizing the construction process in 2020. Digitization is still being developed, making it possible to complete an increasing number of formalities online, without the need to visit an office.

First, tools for generating electronic applications were made available to investors as part of the e-Construction (e-Budownictwo) website platform. At the same time, the possibility of submitting construction designs in a digital version was introduced into the legal system. When the digital project was introduced in July 2021, Poland was one of the first EU countries to have such a solution. However, in practice, only 2 to 5% of proceedings are carried out electronically.

The launch of the e-Construction platform allowed work to be started on the development of further digital tools that cover almost the entire life cycle of a construction facility:

e-CRUB was launched in 2022 - a newly designed central register of chartered engineers;

- in 2023, the Electronic Building Site Log Book was made available to investors and construction managers a tool required when carrying out construction works;
- also in 2023, the Digital Building Maintenance Log Book was made available it is necessary to document all
 activities and inspections related to maintaining the good technical condition of the facility.

Administrative proceedings in construction are currently carried out in a hybrid mode - paper and electronic. However, full digitization is the goal, which in practice will mean the elimination of paper documentation flow.



Annual meeting of the College of Civil Engineering of the Portuguese Engineers Association | Coimbra, February 29, 2024

The College of Civil Engineering of the Portuguese Engineers Association promotes on the 29th of February, at the Central Region headquarters of the Portuguese Engineers Association, in Coimbra, the National Annual Meeting of the College of Civil Engineering under the theme "Civil Engineering and the challenges of the 21st Century".

In Portugal, the Architecture, Engineering, Construction and Operation (AECO) sector plays a fundamental role in the application of a large part of the Recovery and Resilience Plan funds, both in responding to the need for housing and construction of planned infrastructure and in support for different sectors of the economy. The Portuguese Engineers Association dedicates the year 2024 to "Gender Equality" and dedicates its next Congress to the theme of "Engineering for Development". Therefore, it is also in this context that the National Annual Meeting program will be based, in particular, on the challenges and responsibilities arising from Civil Engineering.



The College of Civil Engineering of the Portuguese Engineers Association

1st Meeting of Civil Engineers - Innovation and Sustainability

On 27th October, the **College of Civil Engineering of the Portuguese Engineers Association (Northern Region) held the 1st Meeting of Civil Engineers - INNOVATION AND SUSTAINABILITY at the Faculty of Engineering of the University of Porto. This event, in line with other actions to foster the development of digital skills as part of the new profile for Civil Engineers, illustrates how digitalisation is accelerating the path to productivity and sustainability on a global scale.**

More than 400 Civil Engineers and Civil Engineering students from Engineering Schools in the northern region attended the event, where internationally renowned projects and works by Portuguese Civil Engineers were showcased, using BIM (Building Information Modelling), AI (Artificial Intelligence) and 3D Building Printing, among other technological tools. It was possible to witness the level of **innovation** resulting from the **digital transformation**, industrialised and modular construction, allowing for the optimisation of resources in a systemic vision towards **sustainability**.





The position of engineering schools in this new digital **twin ecosystem** was also discussed, as was the Strategic Vision for the Development of Civil Engineering, from the perspective of several national companies.

At this meeting, the College of Civil Engineering of the Portuguese Engineers Association (Northern Region) awarded the prize for **Scientific Excellence** to Engineer José António Correia, presented by the President of the Board of the College of Civil Engineering of the Portuguese Engineers Association, Engineer Humberto Varum, and the prize for **Career Excellence** to Engineer António Manuel Adão da Fonseca, presented by the President of the Regional Board of the Portuguese Engineers Association (Northern Region), Engineer Bento Aires.

> The Regional Board of the Portuguese Engineers Association (Northern Region)

> > Teresa Braga Barbosa (Coordinator)

1st Meeting of Civil Engineering Students of the Portuguese Engineers Association's Southern Region

On 4 October 2023, the College of Civil Engineering of the Portuguese Engineers Association (Southern Region), with the backing of the Board of Directors of the Portuguese Engineers Association's Southern Region, held the 1st **Meeting of Civil Engineering Students of the Southern Region** at the Portuguese Engineers Association's headquarters in Lisbon, which was attended by an average of around 130 participants.

With the aim of bringing young audiences closer to their future professional association, it was very interesting to see how current students and future professionals were able to present and support various proposals for the development of the profession in a totally structured and well-founded manner.

The opening session was attended by the President of the Portuguese Engineers Association, Fernando de Almeida Santos, the President of the Board of Directors of the Portuguese Engineers Association (Southern Region), António Carias de Sousa, the President of the Board of the College of Civil Engineering of the Portuguese Engineers Association, Humberto Varum, the President of the National Federation of Civil Engineering Students, Bernardo Fernandes, a Civil Engineering student at the University of Coimbra, as well as the Coordinator of the College of Civil Engineering of the Portuguese Engineers Association (Southern Region), Fernando F. S. Pinho.

In the meeting's main session, moderated by Civil CRC member Carla Marchão, five Civil Engineering students from different Portuguese Higher Education Institutions (located in the Portuguese Engineers Association's Southern Region) covered the meeting's main theme "Challenges in teaching and opportunities in the Civil Engineering profession".

The final discussions were moderated by Civil CRC member Carlos Cruz, after which the meeting closed at 6.30pm with a brief summary of the talks delivered by Fernando Pinho.



The Regional Board of the Portuguese Engineers Association (Southern Region) Fernando F. S. Pinho (Coordinator)

United Kingdom

We must work in harmony with nature, says ICE's 159th president

Professor Anusha Shah outlined her presidential theme at her inaugural address.



Professor Anusha Shah, ICE's 159th president

Professor Anusha Shah gave her Presidential Address at One Great George Street in London.

Working in harmony with nature in rural and urban areas is vital if we're to reach our net zero goals, according to the new president of the ICE. Professor <u>Anusha Shah</u>, the institution's 159th <u>President</u>, shared the theme for her presidential year at her first official address at ICE's HQ in London last night.

"My presidential year will be about how we become a nature and people-positive profession at heart," she said in her speech. "We have failed to understand the interrelationship between infrastructure and nature." "We are implementing nature-based and green solutions globally, but in pockets. It's not the norm yet."

According to Professor Shah, construction is responsible for 30% of biodiversity loss around the world. But, adopting a nature- and people-positive approach will enable engineers to reverse the environmental decline, she said.

"Not only will we reach net zero faster, we'll also improve climate resilience and reap multiple benefits for our society and the planet."

'Stay curious'

Professor Shah said that members should "stay curious" and ask if every single project is needed. They should also make sure they've ruled out all nature-based and repurposed solutions before going ahead. Other questions she thought that members should be thinking about include:

- Are we designing in an inclusive manner?
- Are we considering circularity?
- Are we leveraging the power of data and artificial intelligence?

Building connections

Professor Shah encouraged members to collaborate internationally and across industries.

"I want to bring the global north and global south closer together," she said. "I want us to learn from indigenous populations, who've drawn resilience from nature for centuries. "And I want the governance, planning, and strategic thinking in wealthier nations to be available for the benefit of all."

Understanding the infrastructure and nature relationship

In a film accompanying her speech, Professor Shah said that it was time for civil engineers to better understand the inter-relationship between infrastructure and nature – and do more.

"Building assets which do less harm to our natural world is not good enough anymore. To put it simply, we don't have an option but to be nature-positive," she said in the video.

"Our infrastructure needs to interact with nature in a way which is restorative and regenerative, rather than extractive.

She added: "A net zero and a nature-positive future is impossible without being people-positive."

Anusha Shah's President's Future Leaders

Each ICE president chooses a group of the brightest graduate and technician members to be <u>Future Leaders</u> to support them during their presidency.

They will work on projects that are integral to the ICE's Plan and have an effect on the industry.

This year's President's Future Leaders are:

- Aimee Jones, civil engineer apprentice at Mott MacDonald
- Alexis Solomou, graduate civil engineer at Arcadis
- Elena Lindsey, lead civil engineer and project manager at the Government of South Georgia and South Sandwich Islands
- Evita Widjaja, engineer at AtkinsRealis
- Marcus Rodin, assistant structural engineer at AtkinsRealis
- Nusayba Abaas, civil engineer apprentice at Balfour Beatty
- Ramsha Saleem, graduate civil engineer at WSP

Sayid Salim, geotechnical engineer at Arup

Who is Professor Anusha Shah?

Professor Anusha Shah is a senior director for resilient cities and the UK climate adaptation lead at Arcadis.

She's currently seconded to Effiage, Kier, Ferrovial and BAM Nuttall joint venture on <u>High Speed 2</u> as senior director of environmental consents.

Shah's also a non-executive director at the Met Office, UK, and is a Royal Academy of Engineering (RAEng) visiting professor at King's College London on climate adaptation, sustainability and inclusive design.

In 2021, the University of Wolverhampton gave her an honorary professorship for knowledge transfer and the University of East London gave her a doctorate for her services to climate change in engineering.

Professor Shah is also a visiting professor at the University of Edinburgh and has been invited for lectures at Cambridge Institute for Sustainability Leadership at the University of Cambridge.

She specialises in water and environmental engineering with over 22 years' experience in designing, managing and leading projects and programmes in the UK and internationally.

She's a past chair of the Thames Estuary Partnership Board (2017-20).

She has received several awards, including the 2020 Top 50 UK Women Engineers Sustainability Award and CE-CA FIR (Fairness, Inclusion and Respect) Inspiring Engineers Award 2019.

Climate Reframe recognised her as one of the UK's leading BAME (Black, Asian and Minority Ethnic) voices on climate change.

Anh Nguyen, content strategy manager at ICE

Race and ethnicity - what can the industry do next?

Representatives from the built environment sector came together to discuss how to create a more diverse and inclusive industry.



If the CEO can find the time, everyone can, and everyone can be an ally. Image credit: Shutterstock

'It's our industry, it's our responsibility' – that was the message that built environment professionals wanted the sector to know about their role in creating a diverse and inclusive workplace.

They discussed this role at a recent race and ethnicity workshop hosted by the ICE, <u>National Highways (NH)</u>, and the <u>NH's Supplier Diversi-</u> ty Forum.

Taking responsibility for encouraging and ensuring diversity is something everyone has to play a role in, the attendees at the event agreed. By creating an inclusive workplace, we can grow and retain talent, develop a more diverse and welcoming sector, and in turn create infrastructure to build better communities.

The event, <u>Race and Ethnicity – Everyone's Business</u>, took place at the end of October, marking the culmination of Black History Month. Time to take control

Keynote speaker <u>Anit Chandarana</u>, Department of Transport's interim director, recognised that interventions are still needed to address racism throughout the sector.

However, he implored the industry to take control of its own future, rather than waiting for others to solve the issue. A broad and diverse panel discussion took place, chaired by Loraine Martins OBE.

Panellists included Olu Olabode, Balfour Beatty commercial director, <u>Mark Thurston</u>, formerly of <u>HS2</u>, <u>David Wabo-</u> so <u>CBE</u>, an independent strategic advisor, and <u>ICE President Professor Anusha Shah</u>.

The panel shared how they worked their way to senior positions, discussed inter-generational changes and experiences of conscious and unconscious bias in the workplace.

Everyone needs to take part

They stressed the importance of leaders who listened, participated in employee networks and made themselves visible allies.

The consensus was - if the CEO can find the time, everyone can, and everyone can be an ally.

One of the key takeaways from the conversation was that building a diverse and inclusive workplace requires everyone to play their part.

Attendees were also invited to take part in one of three workshops.

These focused on learning from outside the sector, the <u>ICE's anti-racism toolkit</u> and how to use your position to drive change.

Attendees shared their experiences, including how and why they had begun dialogues about race in the workplace, their fears in doing this, and how they overcame them.

They also discussed what they did to better educate themselves on creating inclusive workplaces.

Andrew Stanley, head of education policy at Institution of Civil Engineers

ICE awards first Chartered Infrastructure Engineer title A past President's Future Leader has earned the accolade.



The ICE has awarded the first Chartered Infrastructure Engineer (CIE) title to Chris Landsburgh, a decarbonisation technical director at consulting firm AECOM.

CIE is the first new title to be awarded for 100 years. The ICE began awarding the first Chartered Engineer titles in 1923.

Landsburgh, a civil engineering graduate, has been involved in the infrastructure sector for more than 10 years and specialises in decarbonising infrastructure. He provides advice on net zero plans, whole life carbon accounting and sustainability strategies for governments and businesses.

Chris Landsburgh, decarbonisation director at AECOM, is the first-ever Chartered Infrastructure Engineer.

Who is Chris Landsburgh?

Already a <u>Chartered Environmentalist</u>, Landsburgh was an <u>ICE</u> <u>President's Future Leader</u> under Past <u>President</u> Paul Sheffield. He is also an ICE Carbon Champion and was involved in the PAS

2080 standard for carbon management in buildings and infrastructure. "The ICE has been one of my professional homes for several years, and becoming the first Chartered Infrastructure Engineer is an honour," said Landsburgh.

He said that the title reflects the industry's commitment to evolve.

"I'm glad that this new scheme fosters a culture of inclusivity and collaboration, positioning us well to navigate the demands of civil engineering, such as climate change and decarbonisation.

Ensuring high standards of Professional Review

ICE President Keith Howells said: "I'm delighted to conclude my tenure as ICE president with the announcement that Chris Landsburgh has become the institution's first Chartered Infrastructure Engineer.

"Awarding this new protected title follows years of discussion with the Engineering Council, BEIS (the now defunct Department for Business, Energy and Industrial Strategy) and HM Privy Council.

"Each required assurance that this new title was needed and that the highest standards of Professional Review would be met.'

Helen Davis, engineering manager at Binnies, was one of the reviewers who interviewed Landsburgh.

She said: "Like any other Professional Review, we ensured that Chris demonstrated his depth and breadth of competence across all the attributes.

'As is typically the case for a good candidate, I came away having learnt something new and with a broader perspective of both the challenges facing the industry and ideas for how these can be addressed."

What is a Chartered Infrastructure Engineer?

The CIE title was acquired by the ICE in response to the recommendations made by Professor John Uff in his 2016 review of UK engineering.

Professor Uff observed that a significant number of academically qualified, practising engineers were operating outside the professional engineering institution (PEI) structure.

In the report, he recommended these engineers become professionally qualified to help assure the public that the engineers who are delivering the infrastructure they use daily are current, credible and competent.

The ICE membership approved the introduction of CIE in 2022.

It allows the ICE to professionally qualify engineers involved in all aspects of infrastructure delivery and welcome them into its membership.

The introduction of the title acknowledges the changing needs of the industry.

New technologies and a desire to build a more inclusive and sustainable world, working with people across multiple disciplines, have shaped these needs.

How do you become a Chartered Infrastructure Engineer?

CIE candidates must take part in a similarly rigorous process as Chartered Civil Engineer candidates.

The same assessment standard and methodology is applied but tailored towards the CIE candidate's specialism. This process includes submitting documentary evidence of competence and professional commitment.

It also involves passing a written communication task and being interviewed by at least two professional qualified reviewers

One reviewer is a civil engineer, the other has knowledge of the CIE candidate's specialism.

Anh Nguyen, content strategy manager at ICE

ICE drives decarbonisation up the global agenda at Singapore summit

The ICE and the UK government's Infrastructure and Projects Authority highlighted the importance of the PAS 2080 low carbon standard.

The ICE and the UK's Infrastructure and Projects Authority (IPA) joined forces at the Transforming Infrastructure Performance Summit in Singapore to highlight that decarbonisation is the crucial challenge facing the profession. ICE director of engineering knowledge, Mark Hansford, and IPA chief executive, Nick Smallwood explained that the PAS 2080 low carbon standard was the key enabling tool to address this challenge.

The summit, organised by software solutions provider Bentley Systems, took place in October and brought together over 100 business leaders from across the south-east Asia region.

Delivering the summit's keynote, Smallwood stressed that decarbonisa- 23 tion was the critical challenge for infrastructure programmes around the world.

"The UK has a legal commitment to get to net zero by 2050. Many other countries around the world have made the same commitment. This challenge is at the heart of every infrastructure programme," he said.

The UK's progress on decarbonisation

Smallwood added that the decarbonisation challenge was firmly at the heart of the UK government's Transforming Infrastructure Performance agenda and that progress was already being made.

He cited the Lower Thames Crossing, the proposed £9bn tunnel beneath the river Thames, east of the current Dartford Crossing, that has set itself a 50% carbon reduction challenge.



Infrastructure and Projects Authority chief executive Nick Smallwood set out why decarbonisation is so critical.

Hansford then joined the IPA's director of function, profession and standards, Karina Singh, on stage to highlight the key role of the new PAS 2080 global standard for managing whole-life carbon reduction.

ICE director of engineering knowledge explains how PAS 2080 is applicable globally.

The audience heard how the UK's Department for Transport's arms-length bodies such as National Highways are mandating that its value chain becomes PAS 2080 accredited from 2025 as a major incentive for adopting the standard.

Hansford said: "PAS 2080 is a key reference document in the UK government's Construction Playbook and is now being mandated by government bodies. If you want to work for National Highways, then by 2025 your organisation must be PAS 2080 accredited."

Hansford then explained how the UK's approach could be mirrored globally: "PAS 2080 is a global standard. It is applicable to the whole built environment - buildings and infrastructure.

"And it looks across the whole value chain and looks at whole-life carbon reduction. It is such a valuable tool."

The role of Al

The debate then widened to the potential impact of AI on the profession. Pinsent Masons global head of infrastructure, Ian Laing, made a powerful argument for how such technologies will not replace human minds

Rather, they "take away the mundane tasks to allow us to be more creative and innovative."

The audience of 100 business leaders came from across south-east Asia and the US.

This, added Hansford, further amplified the importance of understanding PAS 2080.

"When you talk about the role of the human versus the machine, PAS 2080 has almost 20 references to challeng-ing the status quo. This is unique within a formal specification like this," he said.

"Al cannot do that challenging. This is a great and exciting opportunity for professionals to show their worth."

Year in Infrastructure

The summit was followed by Bentley's Year in Infrastructure event which saw live judging of project teams using technology to deliver better outcomes – including carbon reduction.

The rail and transit category, judged by Hansford, proved a case in point with the top prize going to an AECOM team working on the Johor Bahru–Singapore Rapid Transit System (RTS).

This is a cross-border project that will connect Johor Bahru in Malaysia with Woodlands, Singapore.

Featuring stations in both countries, each equipped with customs, immigration, and quarantine facilities, the RTS will ease traffic congestion by reducing the number of cars using the Johor-Singapore Causeway.

This will provide greener transportation for around 10,000 passengers per hour.

AECOM faced several challenges on the rail project. To facilitate collaborative workflows and establish optimal project delivery, AECOM wanted to adopt a digital twin approach.

The AECOM team working on the Johor Bahru–Singapore Rapid Transit System (RTS) has leveraged cutting-edge technology to significantly reduce embodied carbon. Using Bentley's integrated digital modelling and analysis applications, AECOM established a connected data envi-

ronment to optimise planning, design, and construction.

They developed a reality mesh from drone-captured images, accelerating survey and processing fivefold.

This computing power allowed the team to consider several alternatives, and they have devised a solution that will reduce the embodied carbon of the project by 40% while still meeting technical requirements for both countries.

ICE knowledge insights team, knowledge insights at ICE

ICE and IStructE announce partnership to ensure the safety of tall buildings The institutions will work together in running a new higher-risk buildings competency register.

The ICE and the Institution of Structural Engineers (IStructE) have agreed to run a joint registration process for a new competency register for members working on tall buildings.

The register aims to assure people that engineers involved in the construction and maintenance of Higher Risk Buildings (HRB) are working to new, legally required high standards.

An HRB in England is a building that's at least 18m tall or has at least seven storeys, and contains at least two residential units.



Who should go on the Higher Risk Buildings register?

The new standards were developed as part of the <u>Building Safety Act</u> <u>2022</u>, which came into force in England in October 2023. The act also set up a new <u>Building Safety Regulator</u> (BSR), a branch of the government's <u>Health and Safety Executive</u>. Under the new act, the client must assess the competence of the principal designer and principal contractor of an HRB project. The principal designer must assess the competence of the designers

and take responsibility for all design work. The Building Safety Regulator must be satisfied with the competency of

the principal designer and contractor before work can go ahead.

Engineers working on higher-risk building projects will need to be assessed against a new standard to feature on the competency register. Image credit: Shutterstock

What is the new standard?

The ICE has been working with the <u>Engineering Council UK</u> to develop the new register.

It will assess engineers against a new standard known as the <u>UK Standard for Professional Engineering Competence and Commitment contex-</u> tualised for Higher-Risk Buildings (UK-SPEC HRB).

opment Consent Orders needed for major infrastructure projects, would

ensure that good design is high on the agenda from the outset, the re-

It also found that developing a method of measuring design quality

would strengthen the weight of advice from any design champion on a

The standard is based on the BSI standard <u>Core Criteria for building safety in competence frameworks – BSI flex</u> 8670.

The HSE has developed guidance for the new act, including the requirements for competence declarations.

Next steps

The ICE and IStructE are working on the final arrangements for licensing and registration processes. Eligible members will be invited to apply early in 2024.

For further information, please contact Brendan van Rooyen, head of professional services at the ICE.

Brendan van Rooyen , Head of Professional Services at Institution of Civil Engineers

Design champions need to be built into projects from the outset, new research shows The findings highlighted that the role is required across all major infrastructure projects and outlined a need for more clarity.



The research shows that there's a need for a role which focuses on ensuring design is considered at all stages of a project. Image credit: Shutterstock

What are design champions?

In 2018, the NIC's first <u>National Infrastructure Assessment</u> recommended the creation of the design champion role. The NIC outlined that this role facilitates delivery of the commission's design principles, which seek to ensure that projects are developed with respect for people and places while addressing climate and delivering value.

project's direction and scope.

search found.

Then, in its <u>2020 National Infrastructure Strategy</u>, the UK government stated that all infrastructure projects should have a board-level design champion in place by the end of 2021.

The institution, on behalf of industry, took on the role of defining and developing the criteria of the design champions role to give better clarity.

In 2022, the ICE published a working paper, <u>Defining and developing the design champion role</u>, that sought to explain the role of a design champion.

It followed the <u>What makes good design? project</u>, which aimed to identify ICE members' awareness and understanding of the NIC's design principles.

Defining the role of a design champion

To help develop further insight on the role of design champions, and how they should be integrated, the ICE commissioned the research by Birdi & Partners, supported by Frame Projects.

The research team interviewed a diverse and balanced spread of 27 individuals operating across the design, construction and infrastructure sectors.

The ICE's research and role in further refining the role of the Design Champion was acknowledged in the 18 October launch of the <u>NIC's second National Infrastructure Assessment</u>.

Mark Hansford, ICE director of engineering knowledge, said: "In exploring the idea of a design champion, we have been encouraged to hear such positive and interesting perspectives from across the industry about what benefits such a role could bring, not just to individual projects, but to society as a whole.

"As a sector, we have a responsibility to create infrastructure that reflects the needs of the communities, now and in the future.

"Building a greener and more sustainable future must be at the top of our priority list, and design plays a hugely important part of that.

"Creating resilient infrastructure takes planning, and we look forward to design champions taking a lead in pushing for solutions that help address the climate challenge.'

Research findings

The research stage of the project delivered useful insights and strategic guidelines to help create a framework for introducing the role of design champions more widely.

It was clear from conversations with all individuals that there's a need for a role which focuses on ensuring design is considered at all stages of a project.

The design champion would ensure infrastructure is built to a higher quality, creating wider benefits to society.

It would change the perception that infrastructure is 'imposed' rather than built to better serve the public.

Participants also shared that such a role needs to be held by someone at board level, ensuring calls for good design come from the top.

They also believe that design champions should be required to report progress to the government. The research findings will be used in the implementation phase of the project.

Led by the ICE, the next phase will consider how to create a simple process to appoint a design champion, and develop a toolkit to support champions in their role.

Hansford said: "The next steps are to focus on implementation. Through the creation of guidance for client bodies, we hope to build consensus around the role and enable them to introduce design champions on their projects.

A high-level steering group, led by ICE Fellow Tim Chapman, with representation from government, clients and the NIC has been established to drive the project forward.

Alexandra Wynne, knowledge content director at ICE

National Infrastructure Commission appoints ICE Policy Fellow Transport expert, Dr Michèle Dix CBE, will start her role as commissioner in November 2023.



focus aroup.

The <u>National Infrastructure Commission (NIC) has appointed ICE Policy</u> <u>Fellow Dr Michèle Dix CBE</u> to help advise the UK government as transport and planning expert.

UK Chancellor of the Exchequer Jeremy Hunt, who appointed Dix last week, said: "We need high quality infrastructure to deliver growth and boost productivity.

"Michèle will help ensure that the National Infrastructure Commission has the right skills and talent to help deliver the infrastructure we need.

With over 45 years of experience working on transport projects across the public and private sectors, Dr Dix's advice will help address future transport challenges facing the UK.

'Michèle brings a wealth of knowledge of the transport and planning Dr Michèle Dix CBE is chair of the spheres, and she joins us at an important time just as we publish the ICE Connects: Women in Fellowship second National Infrastructure Assessment," said Sir John Armitt, chair of the NIC.

"Michèle's experience in developing world class public transport systems will help inform the commission's ongoing work advising government on

how best to promote economic growth across all regions," Sir John added. Her appointment begins on 1 November 2023. In May 2022, ICE trustee Professor Jim Hall was also appointed to the commission, providing expertise in climate and carbon.

Meet Dr Michèle Dix CBE – transport and planning expert

After completing a PhD in transport and land use planning, Dr Dix began her career at the Greater London Council. She has since worked at Transport for London (TfL) where she developed and delivered the Central London Congestion Charging Scheme with her job share partner.

As managing director of planning, she looked after city-wide strategies, policies and major schemes.

She then became managing director of Crossrail 2 until October 2021.

She is currently a director of the Major Projects Association, a non-executive director of Crossrail International, a

visiting professor at the <u>Bartlett School of Planning at University College London</u> and an <u>ICE Policy Fellow</u>. Working closely with the ICE and the <u>All-Party Parliamentary Group on Infrastructure (APPGI)</u>, last year <u>Dr Dix</u> <u>helped launch and field questions</u> on the ICE-APPGI joint report on <u>Accelerating the delivery of the Integrated Rail</u> Plan.

Dr Dix is also chair of the ICE Connects: Women in Fellowship focus group and has previously hosted a panel event for the network.

Speaking about the network, Dr Dix said: "You should consider becoming a woman fellow for the opportunities that being a part of that network offers.

Ana Bottle, assistant digital content editor at ICE

Girlguiding joins forces with the ICE to empower future engineers

The institution has formed a partnership with three Girlguiding regions to inspire young women to pursue civil engineering careers.

The ICE and three Girlguiding regions have set up a new partnership to inspire guides and rangers to explore the world of civil engineering and STEM (science, technology, engineering and mathematics).

The collaboration will span Northern Ireland, Wales Cymru, and London and the South East of England.

A new civil engineering badge will be at the heart of the partnership, encouraging Girlguiding members to discover



Girlguiding units can request the What do Girlguiding do? help of ICE STEM Ambassadors to Girlguiding a leading chai run the sessions.

Girlguiding, a <u>leading charity for girls and young women in the UK</u>, pro-vides a safe and supportive environment to develop life skills, leadership qualities, and self-confidence.

more about the profession and the skills and knowledge needed to pur-

By collaborating with three ICE regions, Girlguiding aims to enhance and continue to grow its STEM offerings.

The partnership will expose guides and rangers to the exciting world of civil engineering and provide them with access to female role models who have excelled in the field.

Debbie McDowell, chief commissioner for Girlguiding Ulster, said: "We're absolutely delighted to be working in partnership with the Institution of Civil Engineers.

'Girlguiding is all about adventure, challenge and empowering girls and young women to do anything. We're proud to be able to offer a safe, inclusive space where girls can be themselves and have fun - all whilst developing essential skills for their future.'

Beverley Martin, chief commissioner for Girlguiding Cymru, added: "This partnership is a powerful example of how we can work together to inspire and empower the next generation of engineers.

"Through our combined efforts, we are helping girls to develop the skills and confidence they need to succeed in STEM and make a difference in the world. Martin highlighted the activities on offer: "The Institution of Civil Engineers has developed a fantastic resource for

guides and rangers aged 10-18, which includes activities such as bridge building, and solving water distribution following a natural disaster.'

What does the partnership look like?

The ICE, with its members, is well-positioned to provide mentorship and guidance to Girlguiding members interested in civil engineering.

Girlquiding units will run the sessions themselves but have the opportunity to request ICE STEM Ambassadors to lead unit sessions if needed.

By connecting Girlguiding members with female professionals in the field, the ICE hopes to demystify engineering, introduce real-life role models, and offer valuable insights into the various career paths available within the sector. The partnership will include an <u>activity pack</u> filled with a series of activities designed to engage guides and rangers

in the three regions. Activities will include a shelter building challenge, a communication task, geotechnic challenges, an 'out and about' engineering challenge, and much more.

These activities are introduced by female civil engineers and will showcase the principles of engineering through hands-on experience.

It will give guides and rangers a practical understanding of civil engineering concepts and their real-world application.

The activity pack will also include links to ICE Inspire, a 360° virtual careers centre; ICE CityZen Pollution Control, and the ICE's on-demand virtual work experience with Springpod.

Why is this partnership important?

As the world continues to face complex challenges, ranging from climate change to infrastructure development, diverse perspectives and talents in civil engineering are more crucial than ever.

Commenting on the partnership, Séan Harris, director of membership at the ICE, said: "Our regional teams are both proud and excited to team up with Girlguiding UK in an effort to encourage more women to pursue a career in civil engineering.

"Civil engineering is not just about building structures, roads or railways; it's about shaping our future through connecting communities, solving global challenges, and enhancing quality of life for all.

A successful future requires us to harness all available talent and that includes young female engineers from across society", he said.

Collectively, this new partnership will establish a platform for a future where all aspiring engineers, regardless of their gender, have the prospect to excel and create an impact on the world.

Harris added: "We need women with a passion for protecting the environment as we shape the world around us; to that end, we seek greater diversity within civil engineering. Our collaboration with Girlguiding UK, will inspire the next generation of female civil engineers.

The scheme will nurture their limitless talents and encourage fresh thinking in dealing with existential challenges facing humankind. But first, this partnership, will help young women develop essential skills and a greater sense of confidence.

"Together, we will make the world a safer, fairer and more sustainable place in which to live." Get involved

To get involved in this new partnership, ICE STEM Ambassadors based in one of the three regions should contact their local ICE regional team.

ICE Northern Ireland: iceni@ice.org.uk

ICE Wales Cymru: wales.cymru@ice.org.uk

ICE London: london@ice.org.uk

ICE South East England: ice.southeastengland@ice.org.uk

Fatima Uddin, membership marketing executive at Institution of Civil Engineers

New ICE Carbon Champions named: the 'best' of what the built environment can be Engineers from across the UK have been recognised for their efforts to reduce carbon emissions in infrastructure.



Statera Energy Ltd looked for an alternative solution to a carbon-heavy design. Image credit: Statera Energy Limited

Nineteen engineers have been awarded the accolade of ICE Carbon Champion for their work to decarbonise infrastructure.

The engineers, who worked on three major infrastructure projects, were given the title to celebrate their efforts to quantifiably reduce carbon emissions

The ICE's Carbon Champions initiative honours decarbonisation efforts from across the civil engineering community.

It provides recognition for project owners as well as best practice insights

"Civil engineering is in the unique position of being at the forefront of efforts to transform and improve the world we live in," said Lara Young, chair of the ICE Carbon Champions review panel.

"Decarbonising society, and in particular our infrastructure, is a critical step in creating a sustainable future.

"These Carbon Champions embody the best of what the build environment industry can be, recognising champions from every facet of the value chain; from planners, environmentalists, commercial teams and

engineers.

"These champions are each finding new ways to reduce carbon emissions and build sustainable, resilient infrastructure that is fit for the future.

It's exciting to be able to celebrate them and their efforts - and hopefully, inspire others to do the same."

ICE Strategy Session: a spotlight on the industry's decarbonisation efforts

Join Lewis Barlow, co-chair of the Decarbonisation Community Advisory Board, who will give an overview of the ICE's Decarbonisation Strategy.

Project teams from three projects around the UK have been recognised:

Geopolymer injections - Geobear

Geobear was tasked with finding a solution to lower the carbon footprint of maintaining concrete rail level crossings. Traditionally, the maintenance of these level crossings is addressed by replacing the asset, but this solution is timeconsuming, expensive and has a high carbon footprint.

Recognising the impact of the conventional replacement method, Geobear explored the use of geopolymer injections to a rail level crossing in north-east England.

At this site, the concrete level crossing had experienced geometric deterioration.

The geopolymer injections were used to revert the level crossing slabs back to the original designed geometry.

These injections translate to an extension of the asset's lifespan by approximately 22 years. Geobear worked with Carbon Footprint Ltd to compare the CO2e savings associated with the geopolymer injection works, when compared to undertaking a replacement of the rail level crossing.

Over a 60-year period, the geopolymer injection treatments would be required approximately three times to match the anticipated lifespan of a brand-new concrete level crossing.

Their carbon lifecycle assessment found that the geopolymer injection solution would generate 95.11% less CO2e over a 60-year lifespan when compared to the traditional replacement method.

Liam Bromley, senior project engineer, Geobear Global, said it's "brilliant" that the ICE celebrates achievements in decarbonisation.

"I think it's brilliant that the ICE provides a platform for people to showcase their work, not just to highlight our achievements, but also to hopefully encourage others to think more about carbon saving opportunities in their work too," he said.

Cross Tay Link Road - Perth and Kinross Council and Sweco UK

The Cross Tay Link Road (CTLR) will link the A9 over the river Tay to the A93 and A94 north of Scone in Scotland. This will alleviate the traffic congestion in the city centre and allow a shift to greener modes of travel in the city's roads

Perth and Kinross Council (asset owner) and Sweco (designer) worked in collaboration, with a focus on minimising the carbon output and environmental impacts of the project.

They embedded carbon requirements within their procurement for the build phase of the project.

In addition, Sweco supported the development of the tender documents, including carbon in the weighted evaluation criteria.

Tender proposals needed to demonstrate a minimum saving of 30% against the specimen design.

The proposed carbon savings stated in the winning tender were implemented as a contractual KPI in the awarded contract.

Contractual measures have been put in place to ensure emissions are reported, measured and minimised, along with a penalty if they fail to meet these targets. David Jackson, principle carbon consultant, Sweco said it was an "honour" to be recognised.

"Being recognised as an ICE Carbon Champion is a huge honour for Sweco and Perth and Kinross Council's project team for our work integrating carbon management on the Cross Tay Link Road.

Embedding PAS 2080 led to significant carbon reductions being achieved through design and procurement and has shaped how we deliver ongoing projects," he said.

Read the PAS 2080 guidance document

Battery Energy Storage Systems (BESS) Portfolio - Statera Energy Limited

The Statera Energy BESS Portfolio consists of several 50MW battery energy storage assets throughout the UK. These lithium-ion batteries are housed in modified 40ft containers and store excess renewable energy, exporting it back to the national grid when needed.

These batteries provide flexibility to the grid's energy supply and are key for the energy transition.

However, the foundations required for these battery storage assets have a large carbon footprint.

The foundations are normally made from large interconnected reinforced concrete, due to the need to withstand

larger amounts of settlement than a typical industrial development.

Statera Energy Ltd, along with design partners GGP, decided to investigate alternative solutions to the existing carbon-heavy design.

The team undertook an extensive geotechnical exercise and developed a foundation design that reduced the volume of concrete required, improving its carbon footprint. The design is also easier to build and replicate elsewhere. By combining mass poured lean block foundations with precast plinths for upstand, this leaner design reduces concrete used by 1 wagon (8m3) per BES unit.

It also removed the need for temporary moulds, or shuttering, massively improving construction duration, reducing site traffic and as such, further improving on site emissions.

This practice was first trialled on a 50MW site at the Mintey South Battery Storage Project and then successfully rolled out across the portfolio of same technology for 2022 and 2023.

Charlie Gomer, project engineer, Statera Energy, highlighted the carbon savings made. "Statera is proud to have brought together a cross-functional team to optimise the foundations for its Minety South Battery Storage Project, resulting in an overall reduction of 16% in the amount of concrete used," Gomer said. "Rolling out the design to our ongoing projects, Statera has now saved an estimated 470 tonnes of carbon to date.

"Statera's mission is to help the UK reach net zero by 2050 by delivering low-carbon, flexible generation and energy storage technologies to help balance a renewables-led power system, so reducing the overall carbon impact of our construction is paramount.

The new Carbon Champions

- David Jackson (Sweco)
- Kirsten Leggatt (prev. Sweco, now ARUP)
- Lewis Barlow (prev. Sweco, now WSP)
- Helene Piellard (Sweco)
- Jillian Ferguson (Perth and Kinross Council)
- Ross Fletcher (Perth and Kinross Council)
- Liam Bromley (Geobear Infrastructure Ltd)
- Karl Sivori O'Neill (Geobear Infrastructure Ltd)
- Mohamed Wehbi (Geobear Infrastructure Ltd)
- Andy Lee (Geobear Infrastructure Ltd)
- Richard Holmes (Geobear Infrastructure Ltd)
- Evangelos Pastras (prev. Statera Energy Limited, now DNV Services UK Limited)
- Jason Randle (GGP)
- Jon Lee (GGP)
- Jeremy Collins (GGP)
- Jason Tilley (prev. Byrnelooby, now GESL)
- Charlie Gomer (Statera Energy Limited)
- Sina Atabak (Statera Energy Limited)
- Simon Johnson (Statera Energy Limited)

Billie Donovan, climate community executive at Institution of Civil Engineers

News from ECCE Partners

American Society of Civil Engineers (ASCE)

Meet the ASCE President 2024 Marsia Geldert-Murphey



ASCE installed Marsia Geldert-Murphey as its 2024 Society president, Friday at the ASCE 2023 Convention in Chicago.

Photo: Jason Dixson Photography

MERICAN SOCIETY Marsia Geldert-Murphey, P.E., F.ASCE, took the stage on 20th October 2023, inducted as the 2024 Society president during ENGINEERS the annual business meeting at the ASCE 2023 Convention in Chicago.

> "It's almost overwhelming because I understand the responsibility that I've taken on," said Geldert-Murphey, whose ASCE story began in her undergraduate days at South Dakota State University.

> "I take it so seriously. ASCE has meant the world to me my entire career. It helped me to get where I am. So I feel a great deal of responsibility to make sure that we have the ASCE that I had during my career for everyone else moving forward.'

> Marsia Geldert-Murphey is one of two regional directors for Lochmueller Group, a 270-person Midwestern consulting firm, where she is responsible for the operations of their offices in the states of Missouri and Illinois. She has three decades of diverse, increasingly responsible, multi-disciplinary technical and leadership experience, both for private and public entities. Marsia's history includes the founding of two consulting engi-

neering firms and a construction business.

An ASCE member since 1990, when she joined as a student chapter member, Marsia is the current chair of the Public Policy and Practice Committee. She served on the ASCE Board of Direction from 2016-2019 as the Region 7 director. Her extensive ASCE activities include service on several Society-level committees such as program and finance, leader training, and diversity and women, as well as serving as a mentor. She also led the St. Louis Section as president in 2006. Marsia earned her bachelor's degree in civil engineering at South Dakota State University and her master's degree in civil engineering with a focus on geotechnical engineering at Missouri University of Science and Technology in Rolla, Missouri. She remains actively involved with both universities. She is currently serving on the Selection Committee for the new dean of the Jerome J. Lohr College of Engineering, and she is a member of the Civil Engineering Academy at Missouri S&T. Marsia is a licensed professional engineer in several states and is a fellow in ASCE.

Geldert-Murphey assumes the role from 2023 Society President Maria Lehman, who handed over the presidential gavel during the ceremony. Lehman will now serve as the 2024 past president.

The business meeting also included the induction of seven new members of the ASCE Board of Direction:

- 2024 President-Elect Feniosky A. Peña-Mora
- Region 1 Director Bradley A. Kubiak
- Region 4 Director Christina LaVaughan Ammens
- Region 5 Director Sarah L. Matin
- Region 9 Director Yazdan T. Emrani
- Technical Region Director LeAnne Napolillo
- At-Large Director Isamar Escobar

For the first time in Society history, the board will include more women than men. It's a fact not lost on Geldert-Murphey as she dives into her presidential year, focused on mentoring, youth, and diversity.

"We recognize the need to incorporate the next generation – our students and our younger members – in shaping what our organization looks like moving forward," Geldert-Murphey said.

"There is an energy. There is a recognition that we do have to have this diversity that represents the communities that we serve. And we're not only talking. We're walking the talk.

"I am so excited that we're about doing, we're not just about talking."

Source: ASCE website

Japan Society of Civil Engineers (JSCE)



JSCE Disaster Report: "Geotechnical Preliminary Report of The Mj 7.3 Fukushima Earthquake on March 16, 2022" (FactSheet: FS2022-E-0002)

Author:

Masataka SHIGA¹, Kwok-Kwan LAU², Pei-chen HSIEH³, and Takashi KIYOTA⁴

- 1. Member of JSCE, Assistant Professor, Institute of Industrial Science, The University of Tokyo
- 2. Ph.D. student, Dept. of Civil Eng., Graduate School of Eng., The University of Tokyo
- 3. Member of JSCE, Ph.D. student, Dept. of Civil Eng., Graduate School of Eng., The University of Tokyo
- 4. Member of JSCE, Associate Professor, Institute of Industrial Science, The University of Tokyo

Key Facts

- Hazard Type: Earthquake
- Date of the disaster: March 16th, 2022
- Location of the survey: Fukushima Prefecture and Miyagi Prefecture
- Date of the field survey: March 21st and 22nd, 2022
- Survey tools: Photos, videos, UAV, and LiDAR

Key findings:

- 1. Cracking, ground settlement, and ground deformation were observed in the roads, bridge approaches, and embankments in Fukushima Prefecture and Miyagi Prefecture
- 2. The landslides in Date Dam, Unoomisaki Tunnel portal area, and Tarumizu Dam could be associated with the strong ground motion of this earthquake event.
- 3. Liquefaction was also identified in Soma Port of Fukushima Prefecture.

Key Words: The 2022 Earthquake off the coast of Fukushima Prefecture, Ground Damage, Slope Failure, Liquefac-

tion

Read the paper here.

You can access the latest JSCE International Activities Center Newsletter of December 2023 at the link here <u>IAC</u> <u>News No.134, December 2023</u>.

Korean Society of Civil Engineers (KSCE)



KSCE Journal of Civil Engineering



The KSCE Journal of Civil Engineering is a technical monthly journal of the Korean Society of Civil Engineers. The journal reports original study results (both academic and practical) on past practices and present information in all civil engineering fields.

The journal publishes original papers within the broad field of civil engineering, which includes, but are not limited to, the following: coastal and harbor engineering, construction management, environmental engineering, geotechnical engineering, highway engineering, hydraulic engineering, information technology, nuclear power engineering, railroad engineering, structural engineering, surveying and geo-spatial engineering, transportation engineering, tunnel engineering, and water resources and hydrologic engineering. Both theoretical and practice-oriented papers, including case studies and reviews, are encouraged.

Read the Volume 27, issue 12, December 2023

World Federation of Engineering Organizations (WFE0)



World Federation of Engineering Organizations Fédération Mondiale des Organisations d'Ingénieurs

The World Federation of Engineering Organizations (WFEO) is the international organization for the engineering profession. Founded in 1968, under the auspices of UNESCO, WFEO brings together national engineering institutions from some 100 nations and represents more than 30 million engineers.

Mustafa B. Shehu Elected President of WFEO



In a landmark development for the global engineering community, Mustafa B. Shehu has been elected as the new President of the World Federation of Engineering Organizations (WFEO). The announcement was made during the General Assembly in Prague, Czech Republic, in October 2023, marking a pivotal moment in the organization's history.

Mustafa B. Shehu, a distinguished engineer with an illustrious career, has a wealth of experience and a proven track record of leadership within various engineering bodies. Prior to his role as President of WFEO, Shehu served as the President of the Nigerian Society of Engineers in 2012-2013 and held the position of Past President of the Federation of African Engineering Organizations (FAEO).

His journey in the field of engineering began with the study of electrical engineering in Nigeria, where he laid the foundation for a remarkable career. Shehu's early professional years were dedicated to the 1,320MW Lagos Thermal Station Egbin, where he honed his skills and expertise in electrical engineering.

Shehu's commitment to the advancement of engineering is evident in his tenure at the Kano State Rural Electricity Board, where he started as a Senior Engineer and steadily climbed the ranks to become Assistant Director in 1998. Demonstrating entrepreneurial spirit, he co-founded MBS Engineering Limited with colleagues, a company specializing in electrical and mechanical engineering services, power engineering, and Oil and Gas engineering.

Beyond his corporate achievements, Mustafa B. Shehu has been an active participant in professional and business associations, showcasing his dedication to the broader engineering community. As a Fellow of the Nigerian Society of Engineers and the Solar Energy Society of Nigeria, Shehu has demonstrated his commitment to the highest standards of professional excellence.

The global engineering community recognized Shehu's leadership qualities when he was elected as the President-Elect at the Federation's General Assembly in San José, Costa Rica, in March 2022.

As the newly appointed President of WFEO, Mustafa B. Shehu brings not only a wealth of technical expertise but also a vision for fostering global collaboration and sustainable development through engineering. His term is anticipated to be marked by initiatives that address the pressing challenges facing the engineering profession in the 21st century. The global engineering community eagerly looks forward to the positive impact and transformative changes that will unfold under his presidency.

WFEO General Assembly Meetings and 7th World Engineers Convention: A Recap of Prague 2023



The vibrant city of Prague, Czech Republic, became the epicenter of global engineering discussions as the World Federation of Engineering Organizations (WFEO) convened its biennial General Assembly meetings from October 9 to 15, 2023. Hosted by the Czech Society for Science and Technology (CSVTS), the events brought together engineering professionals, policymakers, and educators from around the world to discuss critical issues and advancements in the field.



The WFEO General Assembly comprised a series of significant gatherings, including Board and committees meetings, Standing Technical Committees (STCs), Policy Implementation Committees (PICs), and the Executive Council meeting. These sessions provided a platform for leaders and experts to deliberate on the current state of engineering and strategize on the profession's future.

A major highlight of the Prague meetings was the 7th World Engineers Convention (WEC2023), held at the Prague Congress Centre from October 11 to 13. The convention, organized by CSVTS, welcomed speakers and delegates from an impressive 76 countries. The three-day conference sessions featured presentations that showcased state-of-

the-art knowledge and solutions across various engineering domains, all aligned with the United Nations Sustainable Development Goals (SDGs).

Noteworthy figures, including United Nations Secretary-General Antonio Guterres and UNESCO Assistant-Director General for Natural Sciences Lidia Brito, conveyed their messages to the convention attendees through video addresses, emphasizing the global significance of engineering in achieving sustainable development.

A pivotal moment during the convention was the launch of the World Engineering Day 2024 Hackathon for engineering students, announced by WFEO Past President Dr. Marlene Kanga during the Young Engineers Forum on October 11. This initiative aims to inspire innovative solutions and engage the next generation of engineers in addressing contemporary challenges.

The WFEO Committee on Education in Engineering session, held on October 12, witnessed the launch of the Engineering Education Review (EER), a new journal in the field of Engineering Education hosted by Tsinghua University. This session also marked the release of the 21st issue of IDEAS.

The culminating event of WEC2023 was the signing of the Declaration on October 13. CSVTS President Prof. Daniel Hanus and WFEO President Prof. José Vieira formalized the commitment to the principles outlined in the declaration during the Closing Ceremony, reinforcing the global engineering community's dedication to sustainable and ethical practices.

The WFEO Executive Council, held on the same day at the Prague Congress Center, played a crucial role in shaping the Federation's future. The council approved amendments to enhance the electoral and decision processes' effectiveness and transparency, and the updated WFEO Code of Ethics was endorsed.

In a momentous announcement, new member institutions were welcomed into the WFEO family, including Engineers Ireland, the Azerbaijan Academy of Engineering, the American Board of Engineering and Technology (ABET), the Institute of Electrical and Electronics Engineers (IEEE), and the Royal Academy of Engineering.

The General Assembly meeting on October 14 was a pivotal juncture, featuring elections for key leadership positions. Mr. Seng Chuan Tan, nominated by the Institution of Engineers Singapore, was elected as President-elect for the term 2025-2027. Ms. Ania Lopez, nominated by the National Council of Engineers of Italy, assumed the role of Executive Vice-president for the term 2023-2027. The assembly also elected representatives from various national members to serve on the Executive Council.

The meeting concluded with the selection of hosts and chairs for Standing Technical Committees (STCs) and Policy Implementation Committees (PICs), setting the stage for focused initiatives in diverse engineering domains.

A significant decision was made regarding the host of the WFEO 2025 General Assembly meetings, with the China Association for Science and Technology (CAST) being chosen. The city of Shanghai will be the venue for the 2025 meetings, showcasing China's commitment to advancing the global engineering agenda.

Another highlight was the signing of a Memorandum of Understanding between WFEO and Engineers Without Borders International (EWB), reinforcing collaboration between the two entities.

The General Assembly meeting concluded with WFEO President José Vieira formally passing the leadership baton to President-elect Mustafa Shehu, who will guide the Federation through the 2023-2025 biennium. President Shehu's tenure promises to be a period of continued growth, collaboration, and impactful contributions to the global engineering community.

For more information visit the WFEO website.

You can access the WFEO Flash-Info #54, December 2023 at the link here <u>WFEO Flash-Info #54, December</u> 2023.

European Civil Engineering Education and Training Association (EUCEET)

2nd AECEF – EUCEET Joint Conference "The role of interactive teaching/learning approaches in the development of soft skills for Civil Engineering Education"



The 2nd Joint International Conference of the European Civil Engineering Education and Training Association (EUCEET) and the Association of European Civil Engineering Faculties (AECEF) took place in Pisa, Italy, at the "Le Benedettine"-University of Pisa Congress Centre from Thursday, October 19, to Friday, October 20, 2023. Under the theme, "The role of interactive teaching/learning approaches in the development of soft skills for Civil Engineering Education," the conference aimed to address the evolving landscape of civil engineering education in the context of a changing world.

Interactive Teaching/Learning Approaches in the Context of the Bologna Declaration:

Since the Bologna Declaration, the adoption of the Student-Centred Approach has driven the evolution of interactive teaching and learning methodologies in civil engineering education. In the face of the challenges posed by the COVID-19 pandemic, coupled with the imperative for a Green and Digital transition, the conference explored the development of soft skills among future civil engineers. This includes a focus on Sustainable Development Goals (SDGs) such as clean water

and sanitation, affordable and clean energy, industry, innovation, and infrastructure, sustainable cities and communities, and climate change.

Conference Topics:

The conference provided a platform for the scientific discussion and comparison of traditional and innovative teaching/learning approaches, with a special emphasis on soft skill development in civil engineering. The topics that were covered include:

- Future-oriented educational concepts in engineering.
- Non-traditional laboratories for engineering education.
- Impact of climate change on engineering education.
- Student-centred learning environments.
- The role of education for women's leadership in engineering.
- Diversity and inclusion in engineering education.

For more information visit the Conference website.



EU News

Agreement on the Critical Raw Materials Act will increase Europe's resilience and economic security



The Commission welcomes the political agreement reached on 13 November between the European Parliament and the Council on the Critical Raw Materials Act (CRMA). The Act sets out a series of comprehensive actions to ensure the EU's access to a secure, diversified, affordable and sustainable supply of critical raw materials. The new rules help to increase domestic capacities for critical raw materials along the supply chain, complementing initiatives to diversify their supply through international partnerships supported by the Global Gateway facility. To strengthen the EU domestic capacities, the Commission will, with Member States, identify Stra-

tegic Projects along the value chain that will benefit from more streamlined, faster and more efficient permitting procedures as well as facilitated access to finance.

Read more

Commission sets out immediate actions to support the European Wind Power industry

As announced by President Ursula von der Leyen in her <u>State of the Union</u> <u>speech</u>, the Commission has presented a <u>European Wind Power Action</u> <u>Plan</u> to ensure that the clean energy transition goes hand-in-hand with industrial competitiveness and that wind power continues to be a European success story.



Read more





The challenge of skills shortages has grown over the years and now encompasses all EU Member States and all sectors of the economy. The <u>Eurobarome-</u> ter survey's findings will feed into the Commission's policy making. Among other things, they will inform the implementation of the <u>SME relief package</u> that was adopted in September 2023 and stipulates various actions to improve the skills situation for SMEs in the EU.

On 13th July, the ambassadors of member states to the EU (Coreper) agreed the Council's position on the 2024 EU draft budget. In total, the Council's position for next year's budget amounts to \notin 187.008 billion in commitments and \notin 141.167 billion in payments.

Overcoming skills shortages is a priority for the European economy. The Commission is already working on addressing skills shortages in key strategic sectors like batteries or other net zero technologies. This study will contribute to our understanding of how skills shortages affect SMEs, which represent 98% of the European economy, in view of improving their overall competitiveness. Thierry Breton, Commissioner for Internal Market - 14/11/2023

Read more

Investing in the EU's competitive future – Adoption of the European Semester Autumn Package

The European Semester is a yearly exercise that helps identify economic and social challenges in the EU, and policy responses to allow Member States to fulfil their potential – for the benefit of us all. This year, the EU is facing a number of important challenges, such as high inflation and high energy prices that need to be tackled to improve the EU's competitiveness.



Read more

Zoom on the 2023 edition of the European SME Week



On 13-15 November, the SME Assembly featured workshops on subjects such as sustainable enterprises, upskilling for a datadriven future, and navigating cultural change in enterprises as well as fostering entrepreneurial spirit, investing in skills, supporting digital transition, improving business environments and inclusive entrepreneurship. One of the highlights of the SME Assembly was certainly the visit of Enrico Letta, the Council's independent rapporteur for the future of the Single Market. You can watch his interview <u>here</u>. As every year, the assembly was also the moment to celebrate excellence in enterprise promotion with the <u>European</u> <u>Enterprise Promotion Awards</u>. And we are very proud of the

association with the Federation of European Securities Exchanges – FESE and European Issuers and their smalland mid-caps awards of excellence on Europe's stock markets.

GROW handed the baton over to the <u>Enterprise Europe Network</u> (EEN) for their <u>Annual Conference</u>. EEN is the largest European business support network consisting of 3000 experts from 450 organisations in almost 70 countries, including innovation and regional development agencies, chambers of commerce, technology centres and research institutes. Under the title "The EEN at 15: Showing the Way Forward for SMEs", the three-day conference focused on how the network's business support services can best meet the changing needs of SMEs, while also celebrating the network's 15th anniversary. This year's edition brought together 800 participants in Bilbao and around 200 online to discuss the EEN's ongoing efforts to support SMEs in innovating, expanding internationally and fostering cross-border cooperation, and to create synergies between network members. Many success stories on how the EEN has supported European SMEs were also presented and the best ones have been awarded during the closing session.

The European SME Week 2023 was one of the most successful events of this kind, thanks to the Spanish Presidency of the Council, the Basque Country, the EEN and GROW teams working tirelessly for SMEs. You can see all the videos of the SME Assembly on the <u>YouTube channel Promoting Enterprise</u> and the opening and closing session of the EEN Annual Conference on the <u>EEN YouTube channel</u>.

European Parliament and EU Council reach provisional agreement on 'Ecodesign for Sustainable Products' regulation

The Spanish Presidency of the Council of the EU, along with representatives from the European Parliament and the Commission, achieved a political agreement on the 'Ecodesign for Sustainable Products Regulation' (ESPR). This groundbreaking regulation aims to establish a comprehensive framework for ecodesign and information requirements applicable to almost all products entering the EU market. The agreement, a flagship initiative under the EU Action Plan for the Circular Economy and the European Green Deal, covers aspects such as energy efficiency, circularity, and environmental impact reduction. Key elements include the exclusion of certain products, prioritized product categories, a ban on the destruction of unsold textiles and footwear, and the introduction of a European digital product passport to enhance transparency. The regulation is expected to shift the market towards sustainable practices, promoting durable, repairable, and environmentally friendly products. While the agreement awaits confirmation by the European Parliament and the Council, its potential impact on the EU market and global competitiveness is already anticipated.



Read more

Launch of the 2nd Call for Expression of Interest for the InvestEU Fund and the InvestEU Advisory Hub



The Commission published the 2nd Call for Expression of Interest for the InvestEU Fund and the InvestEU Advisory Hub to become an implementing partner or an advisory partner. The EU guarantee amount available under this call for the InvestEU Fund is €1.37 billion. The maximum amount of EU contribution available under the 2nd call for the InvestEU Advisory Hub is €33.1 million with a maximum allocation of €5 million per advisory partner.

Deadline: 28/2/2026

Read more

Net-Zero Industry Act: Council adopts position to boost technologies for the green transition

On 7th December the European Council adopted a 'general approach' on the Net-Zero Industry Act, a significant step in establishing a framework to boost Europe's net-zero technology products manufacturing ecosystem. The

Act aims to accelerate the industrial deployment of critical technologies essential for the transition to climate neutrality, utilizing the single market to enhance Europe's economic resilience and competitiveness. Key provisions include simplifying permit procedures, prioritizing strategic projects, facilitating market access for technology products, enhancing workforce skills, and creating a platform for EU coordination. The Act sets a benchmark of 40% production to cover EU's needs in strategic technology products and establishes specific targets for CO2 carbon capture and storage. The Council's position supports the Act's objectives, introducing improvements and expanding the scope of application, technology lists, and evaluation mechanisms. The mandate enables streamlined permitting processes for strategic technologies, introduces net-zero acceleration areas, and includes CO2 transport and infrastructure in the provisions. It clarifies public procurement procedures and supports the establishment of European Net-zero Industry Academies. The Act is a crucial component of the Green Deal Industrial Plan, and the Council's position provides a negotiating mandate for discussions with the European Parliament.

Read more



Public Consultations of the European Commission

Please note that the European Communications regularly does Public Consultations many of which are very relevant for the engineering professions. We would therefore advise to regularly check the page and contribute to relevant topics through the link **here**.

Upcoming events



Date	Event	Place
14-15.03.2024	ISHCCO General Assembly & Congress 2024	Lisbon, PORTUGAL
14-16.04.2024	9 th World Congress on Civil, Structural, and Environmental Engineering (CSEE 2024) CSEE CONGRESS https://cseecongress.com/	London, UNITED KING- DOM
17-21.04.2024	The Festival of the New European Bauhaus 2024	Brussels, BELGIUM
24-26.04.2024	2024 8 th International Conference on Structure and Civil Engineer- ing Research Structure and Civil Engineering Research Madrid, Spain April 24-26, 2024 http://www.icscer.org/	Madrid, SPAIN
22-24.05.2024	78 th ECCE General Meeting	Riga, LATVIA
9-11.10.2024	2 nd International Conference of Selected Issues in Building Struc- tures Design (BSD2024)	Kielce, POLAND





MERRY CHRISTMAS & A HAPPY NEW YEAR

from

THE EUROPEAN COUNCIL

OF CIVIL ENGINEERS

Dear Members of the European Council of Civil Engineers, Dear Colleagues,

As we approach the joyous holiday season and bid farewell to another remarkable year, we extend our heartfelt gratitude to each and every one of you for your unwavering commitment to the field of civil engineering and your invaluable contributions to the advancement of our profession.

This year has brought its share of challenges, but together, we have demonstrated resilience, creativity, and a steadfast dedication to the principles that define our collective pursuit of excellence. In the spirit of unity and collaboration, we have achieved significant milestones and fostered meaningful connections within our community. As we celebrate Christmas, may the warmth of the season fill your hearts with joy, and may the spirit of togetherness strengthen the bonds that unite us. May you find moments of peace and reflection, surrounded by the love of family and friends.

Looking ahead to the New Year, let us embrace the opportunities that lie before us with optimism and enthusiasm. May 2024 be a year of continued innovation, progress, and shared success. Together, we can build a future that reflects the best of our collective aspirations and endeavours.

On behalf of the European Council of Civil Engineers, we extend our sincere gratitude for your dedication and wish you a Merry Christmas and a Happy New Year. May the coming year bring you prosperity, good health, and fulfilment in all your endeavours.

Warm regards,

Andreas Brandner ECCE President Maria Karanasiou ECCE General Secretary

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European Council of Civil Engineers

European Council of Civil Engineers

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"Civil Engineers at the Heart of Society Building Life Quality and a Sustainable Environment" The European Council of Civil Engineers (ECCE) was created in 1985 out of the common concern of the professional bodies for Civil Engineers in Europe that the Civil Engineers working together across Europe could offer much more to assist Europe advance its built Environment and protect the natural environment.

At the European Union level, ECCE aims to promote the highest technical and ethical standards, to provide a source of impartial advice, and promote co-operation with other pan-European organizations in the construction industry. ECCE also advises and influences individual governments and professional institutions, formulates standards and achieves a mutual compatibility of different regulations controlling the profession, and formulates standards for a European Code of Conduct of the Civil Engineering Profession and disciplinary procedures applicable throughout the Union.